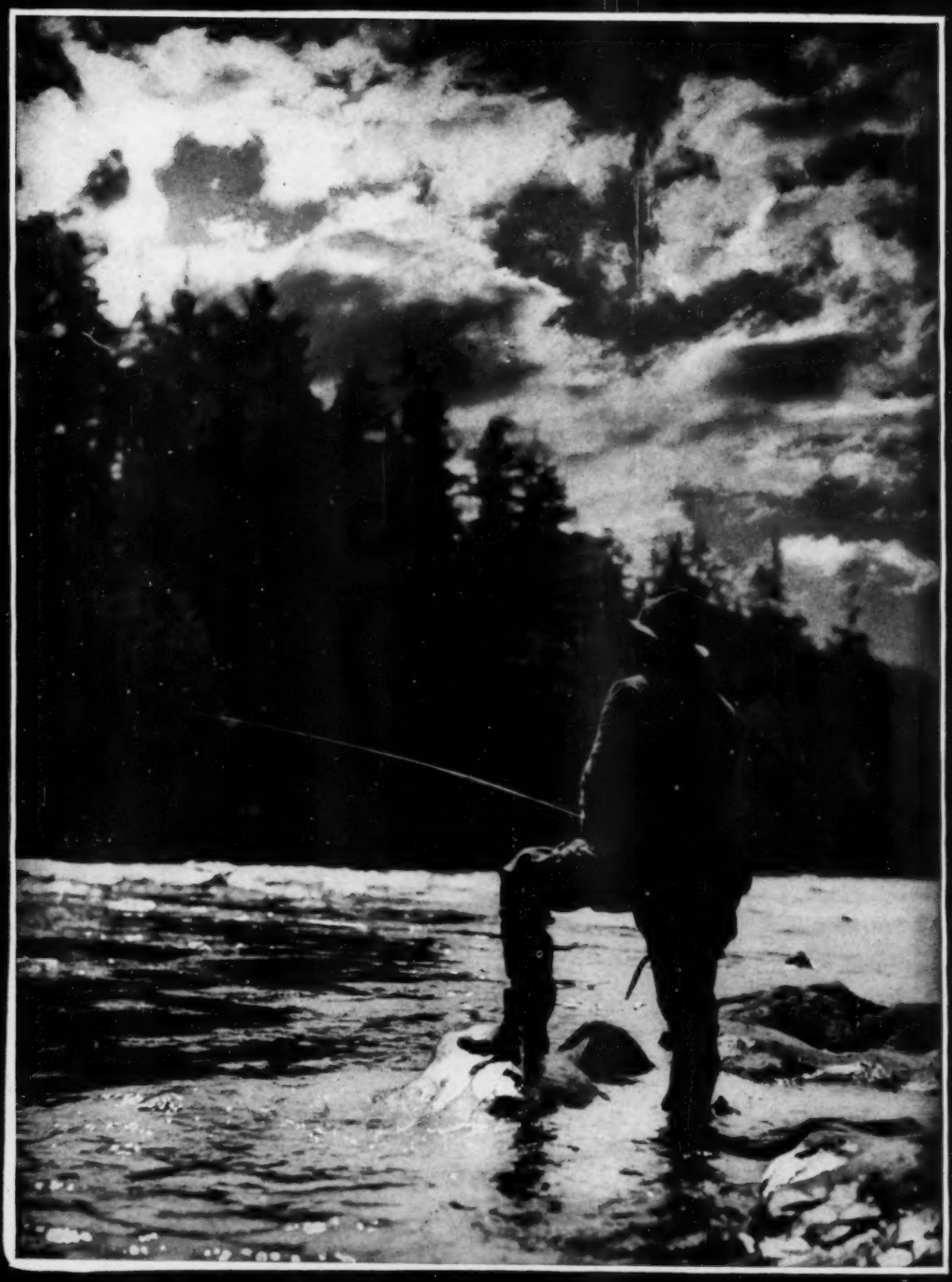
# American FORESTS



APRIL 1924 25 CENTS A COPY

## "YES, MOTHER. *She's right here*"

AT THE close of the day, at the end of the week, at the turn of the year, when your mind ranges back to sum it up, what counts for most?

Is it not the people you spoke to and what you said to them and what they said to you? The ideas born in conversation, the new slant given to your thoughts by a word or two, the greetings and farewells, the advice and the admonitions, the hopes confessed and questions answered—these and a thousand other vocal expressions make up the story of our lives.

To be cut off from human contact is to live but part of life. The wonder of the telephone is that it multiplies human contacts, restores broken ones, strengthens strained ones and constantly develops new ones. In spite of distance or storm or inability to move about freely, you can be as active, sociable, alert and informed as you wish by telephone.

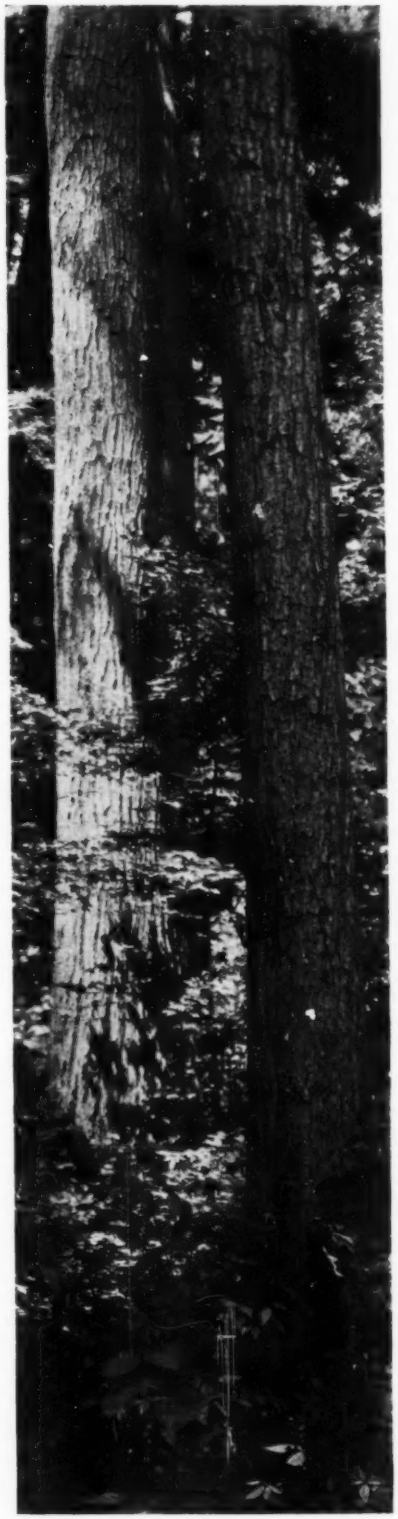
Just think of this the next time you use the telephone. With no greater effort than the calling of a number or the turning of a dial, you can speak to almost anyone, anywhere. No place or person is far away when you can say—"I'll call you up."

---

*Is this somebody's birthday? Is someone in another town being married or celebrating a wedding anniversary? The sound of your voice and your good wishes will brighten the day. The rates are low. You can make a daytime station-to-station call to most places 75 miles away for about 50c. During the evening and night periods many rates are 15% to 40% lower than in the daytime.*

**BELL TELEPHONE SYSTEM**

**Entered as second-class matter at the Post-Office at Washington, D. C., under the Act of March 3, 1879. Acceptable for mailing at special rate of postage provided in Section 1103, Act of October 3, 1917, authorized July 10, 1918. Additional Entry at Baltimore, Md., December 29, 1931.**



# AMERICAN FORESTS


**OVID BUTLER, Editor**

L. M. CROMELIN and ERLE KAUFFMAN, Assistant Editors


## CONTENTS FOR APRIL, 1934


Vol. 40 ◆ ◆ ◆ No. 4



*THE COVER*
"The Spell of Woodland and Stream"
*Photograph by* ROBERT DUDLEY SMITH

*"WIND BLOWN"*
*Photograph by* MANLEY BROWER ..... 146
Fourth Prize Winner in National Contest for "Beautiful Photographs of Trees in America"

*PUBLIC FORESTS IN THE NATIONAL LAND PLAN*
By L. F. KNEIPP ..... 147

*POSTED PARADISE*
By RAY GWYNN HOGAN ..... 151

*FIRE AND WATER!*
By R. W. AYRES ..... 153

*NEW LIGHT ON OLD TREE MYSTERIES*
By ERNEST GONZENBACH ..... 156

*NATIVE CEDAR—AN ART MEDIUM*
By GENEVA LENT ..... 158

*EDITORIAL—*
A Cabinet Committee on Wildlife? ..... 162

*"WHAT THE C.C.C. HAS DONE FOR ME"*
'It Has Taken Me Off the Road'
By FRANK RANNEY ..... 163
'I Have Lived with Nature—Man's First Friend and His Last'
By FARRAN ZERBE II ..... 164

*TRAILS OF THE WILD* ..... 165

*FIELD AND FOREST FOR BOYS AND GIRLS*
"About Earthworms, and Common Beliefs That Are False"
By JOHN HARVEY FURBAY ..... 166

*FAMOUS TREES EVERY BOY AND GIRL SHOULD KNOW—*
No. 12—"The Wesley Oak" ..... 167

*BLACK LOCUST* (Tree Series) ..... 168

*AROUND THE STATES* ..... 172

*SAPLING SAM RETURNS* ..... 179

*FORESTRY IN CONGRESS*
By G. H. COLLINGWOOD ..... 182

*CONSERVATION CALENDAR IN CONGRESS* ..... 186

*ASK THE FORESTER* ..... 187

*"WHO'S WHO" AMONG OUR AUTHORS* ..... 192



PUBLISHED MONTHLY BY

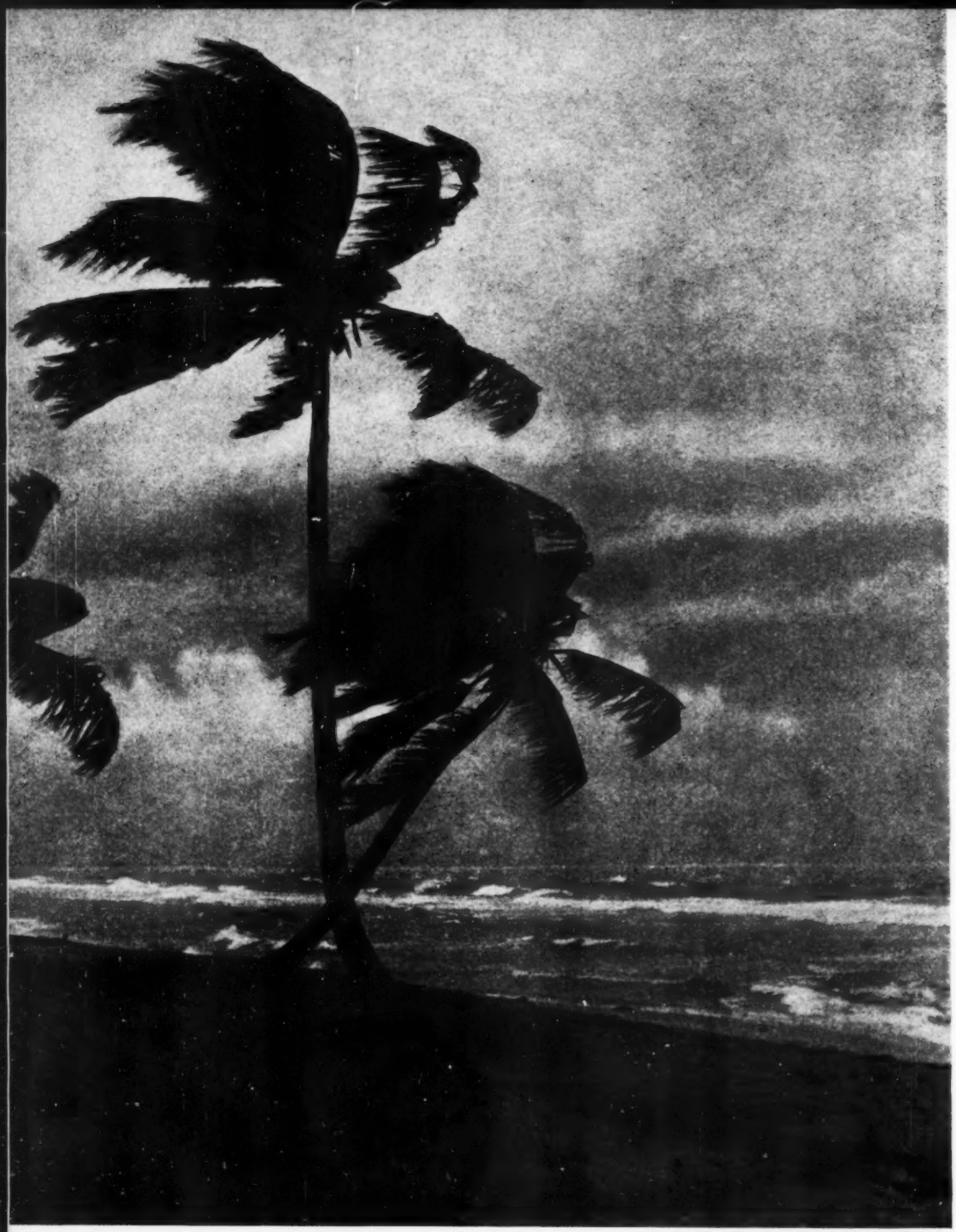
THE AMERICAN FORESTRY ASSOCIATION

1713 K STREET · WASHINGTON, D. C.

35c A COPY · ◆ · FOUR DOLLARS A YEAR



The Editors are glad to receive manuscripts and photographs submitted for publication, but they do so only with the understanding that they shall not be responsible for loss or injury thereto while in their possession or in transit. All manuscripts and art material should be accompanied by return postage. The Editors are not responsible for views expressed in signed articles . . . . Notice of change of address of AMERICAN FORESTS should be received by the fifteenth of any month to affect the mailing of the following month's issue.



Photograph by Manley Brower

# *"Wind Blown"*

★

Coconut Palms—windblown—on the
Coast at Miami Beach, Florida

Winner of Fourth Prize—National Competition Conducted by
The American Forestry Association
for
Beautiful Photographs of Trees in America

AMERICAN FORESTS

Vol. 40 APRIL, 1934 No. 4

# PUBLIC FORESTS IN THE NATONAL LAND PLAN

By L. F. KNEIPP

**In the new and larger program of forest conservation formulated in Washington during the winter, public forests occupy a place of major prominence. Public ownership of several hundred million acres of forest land is contemplated as an essential step in the planned use of the land resources of the United States. In this article, the author who is in charge of the land acquisition work of the United States Forest Service summarizes briefly the social and economic considerations which dictate this greatly expanded policy of public forests.**

**Other phases of the new forest program will be similarly discussed in succeeding issues of AMERICAN FORESTS. Next month Mr. B. P. Kirkland, forest economist of the Forest Service, will deal with the relation of forest credits to the problem of reforestation and forest land use.--EDITOR**

TO a degree greater than at any time in the previous history of the Nation, the American people are viewing the status of basic natural resources in a realistic and factual way, and gradually are accepting the principle that the full social and economic potentialities of the Nation can be realized and made permanent only by a comprehensive program of planned land use. A State here, a county there, a community or inter-related group of communities somewhere else, quietly are initiating the factual determinations, systematic analyses and specific courses of action whereby their institutions better can be brought into accord with the character, condition, and available or prospective volumes of the natural resources basic to their economic and social existence or progress. The principle of nationally-planned land use now finds wide acceptance.

In any planned use of the lands of the United States, forestry will rank next to agriculture in terms of area and of economic significance. Of the entire area of the forty-eight States, approximately one-half is within the natural range of tree growth, and approximately one-third is of such character or so situated as to make some form of forest use or service the highest permanent social or economic service to which the lands may be dedicated. In support of this conclusion there may be advanced five broad categories of forest use or service which singly or in combination will realize from certain types of lands their maximum potentialities of human use.

First, but not necessarily the governing consideration in all cases, comes the production of timber to meet the future industrial and cultural needs of the 150 million people who ultimately will form the population of the United States. No one safely may predict just how much timber these future citizens actually will require or beneficially utilize, but neither may one safely contend that it will be less than the volume which may be produced under the types of forest management dictated by a proper coordination of all forms of forest use. If science exploits the potentialities of forests as fully, for example, as it has those of coal, the future per capita use of timber conceivably may be double the highest past use.

Perhaps the next most important function of forests is as an agency of streamflow stabilization. Forests never can wholly prevent floods which were of frequent occurrence and large proportions even when most of the forest was still virgin in character, but the quick increase in torrential run-off that follows in the wake of forest denudation is so obvious that the stabilizing value of forest hardly can be open to sincere question.

Sometimes slowly and insidiously, sometimes with dramatic and tragic swiftness, the productive top soils of the Nation are moving, through the agencies of water and wind, into new locations in which their original productive value not only is lost but where they destroy other values. A certain degree of soil erosion and movement is a natural process but is in part offset by the corresponding maturity of underlying soil strata. The accelerated movement due to destructive forms of human use is unnatural and both economically and socially calamitous. In large degree its remedy lies in the reestablishment of an adequate forest cover.

Much of our wildlife resource, not only animals and birds but also fish, can flourish only in an environment largely forest in character; and depletion of the forest carries with it depletion or extinction of the wild species with which it was stocked. Restoration of the forest is an essential concomitant of any program to restore the wildlife resources of the wooded regions. Finally, man finds much of his inspiration, his recreation, his knowledge and

**A virgin forest of white pine and hemlock in the Allegheny National Forest, Pennsylvania. While this area is reserved from cutting, the forest growth typifies the "big timber" which public forests must supply to meet the future wood needs of the nation.**

understanding of natural forces and laws of nature, within forests. The esthetic qualities of forests inspire much of the fundamental love of beauty and of nature with which the normal human being is endowed. No human environment is quite complete or fully satisfying to human needs unless it comprises some proportion of forest in which all phases of the complete natural biological complex occur in their proper relationships one with the other.

One major objective of any sound program of planned land use therefore must be the adequate realization of these five potentialities of the service of forests to humanity. The relative importance of each form of service markedly will vary in different situations. In some instances all five will be vitally essential, in some only two or three; conceivably there will be instances where only a single service is economically or socially indispensable and yet that may, in itself, warrant dedication of large areas to forest use.

In a capitalistic social organization the incentive of individual profit usually is essential to constructive individual action; and from the individual viewpoint profit usually is measured or expressed only in monetary forms. Permanent private management of forests in ways adequately meeting all social and economic requirements therefore can be anticipated only to the degree that it returns sufficient financial rewards. The forest successfully managed for timber production may do that; in some cases the forest managed primarily for game propagation may do it, provided the laws controlling the ownership of game are appropriately amended; in some cases the forest in which the esthetic

**Stabilization of stream flow is another major purpose to be served by expansion of public forests. Here in the Cherokee National Forest, Tennessee, the forest is protecting one of the many mountain streams that supply water for human needs hundreds of miles distant.**

and recreational qualities are emphasized may pay its way, but in such cases the public may pay for the privileges of its enjoyment and be subject in its use to the limitations prescribed by the private owners.

But individual owners seldom can capitalize the benefits of streamflow stabilization or erosion control, since their consequences usually are geographically remote and beyond the forest owner's sphere of influence. Past tradition and precedent is against private monopolization of wildlife resources, especially those somewhat migratory in character. Man characteristically rebels against domination by others during his periods of outdoor recreation and communion with nature.

**A scene in Hardeman County, Tennessee, illustrating how vast areas stripped of adequate forest cover are being converted into "bad lands" and choking streams, rivers and reservoirs with silt, with resultant damage to distant communities.**

Temporarily, a situation exists in which private initiative can not capitalize even the timber commodity value of well stocked stands of mature timber, except through methods inimical to economic security and public welfare. Paradoxical as it may seem, a nation with an inadequate supply of trees in the age classes from which its future sawtimber requirements must be met, nevertheless has an acute current problem of too much sawtimber. But that problem exists only because that sawtimber is in private rather than public ownership. If a part of the sawtimber now privately owned were reacquired by the public the problem of forest conservation would be greatly simplified and it would be possible to revive or initiate the private practice of forestry in many regions where it is now impracticable because of the competition of lumber sold at sacrifice prices.

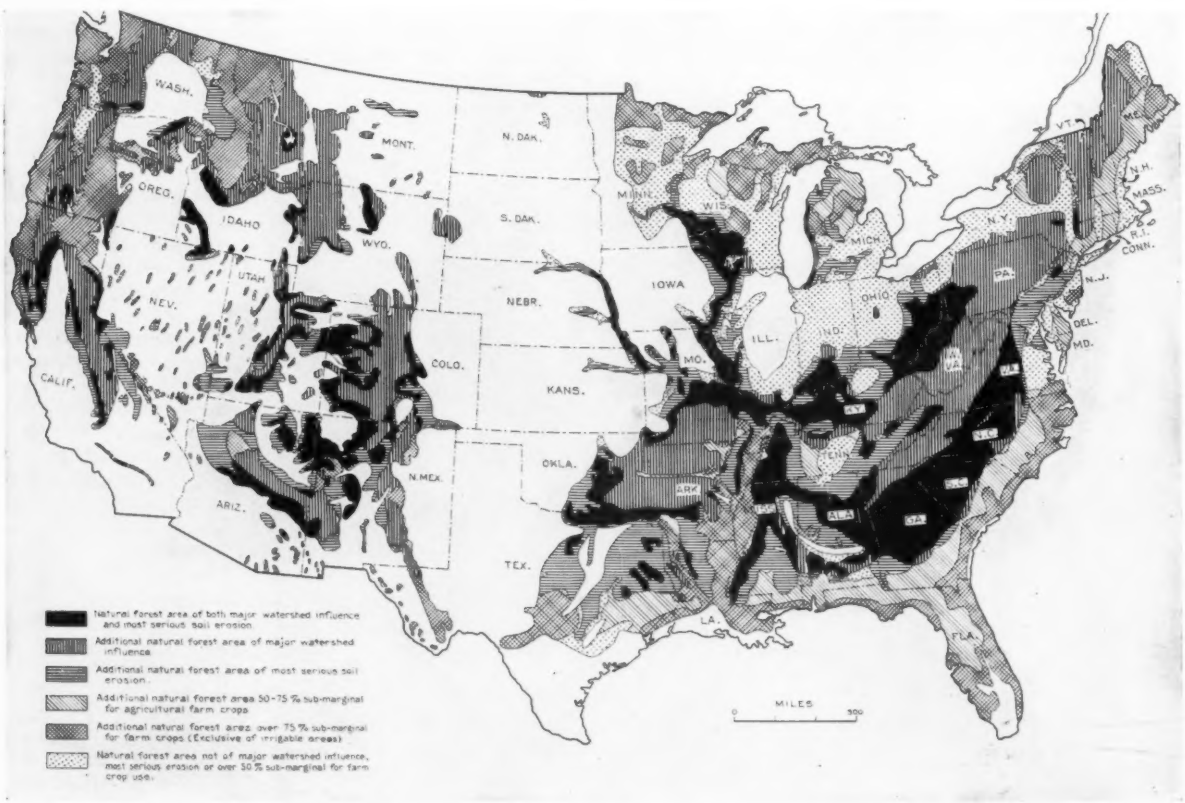
**The human need for recreation amid the inspiring environment of nature dictates a larger program of public forests. This is a summer scene at one of the many public camp grounds in the Natural Bridge National Forest, Virginia.**

The explanation and the solution of this situation are relatively simple. The major part of the remaining

virgin timber of the United States is now in the Pacific Coast and northwestern States, and the greater part of that timber is now in private ownership. Its ownership entails a tremendous and mounting burden of cost in taxes, interest charges and protection costs, and before some of the timber will be subject to utilization the accumulated costs will have exceeded the value of the stumpage. In their desperate efforts to liquidate at least part of the investment and meet inescapable financial obligations, many owners are logging their timber without regard to consumption requirements, or capital values, or the perpetuation of the forest resource, or the effect upon other timber-producing regions. In consequence the productive power of the forests is seriously impaired, if not destroyed, the machinery of utilization is expanded far beyond any reasonable economic need, and the attempts of forest owners in other regions to constructively manage their properties are vitiated or defeated. If 100 or 150 billion board feet of this temporarily surplus sawtimber were acquired by the Federal Government and held against the day when it will be urgently needed there would be a desirable stabilization of both the current and the prospective situation of timber production and use.

**A view in the Florida National Forest where cut-over pine lands are being restored to forests.**

Combined, the several controlling factors dictate only a single acceptable solution, namely, public ownership of much of the forest area of the United States. The trend in that direction is unmistakably defined. One proof of it is the swelling volume of land reversion to public ownership through tax delinquency. Another is the subjective analysis contained in the Copeland Report, which indicates that of the forest lands now privately owned 224 million acres will, through the sheer operation (*Continuing on page* 187)




**This map, prepared by the United States Forest Service, delineates the areas of the country where public forests are most needed to meet social and economic problems of watershed influence, soil erosion and use of land submarginal for agriculture. The areas are shown in relation to the seriousness of these problems within the regions delineated.**

A beautiful pool, wide and deep, where fish were rising in numbers. But when we looked at the sign on the left bank—"Private property! No fishing! Keep Out!"—we decided there *was* no justice.

# POSTED PARADISE

By

RAY GYWNN HOGAN

FROM the smoothly graveled Forest Service road I looked down through the maze of trees and underbrush to the stream. Flowing swiftly and silently between age-marked boulders, it looked deep and green—and very inviting. I had tramped up and down the banks all morning without reward, so I lost little time in making my way to it.

Very carefully I approached the water, keeping well concealed, and flicked my fly far ahead into the stream. Instantly there came a smashing response, lightning fast and loaded with power. I checked the rod and tried to stem the line, but there was no stopping that rainbow with mere thumb pressure. He did a sudden reverse, flipped out of the water, then lit out for the bottom. My reel sang lustily, accompanied at double quick time by the thumpity-thump of my heart. If I could only keep him from taking off too much line! If I could keep him from fouling in the myriad of tree roots! He cut suddenly to the left, swerved, and shot to the surface, broke water and headed again for the bottom. Faster than light, his darkly outlined form slashed through the churning water, right angled, did a pair of barrel-rolls with a loop thrown in for good measure, and then——

"Hey! You can't fish in here! This is posted!"

I didn't look around at the speaker. I merely slacked up, felt the rainbow bob loose, and reeled in my line. I wasn't angry; but disappointment consumed me. This made the fourth time in one morning that I had been chased out of posted ground on the Pecos river.

"Didn't you see my signs?"

I nodded. Signs and campers were about all that I had seen all morning!

"Then what are you doing in here?"

By this time men and their posted properties had become a trifle irritating. I respect private property at all times but when you come up against a proposition such as exists today on the Pecos River in New Mexico, and many others, posted streams are more or less an item of chance to be looked upon much as a school boy would—maybe I'll get run out and maybe I won't!

"Where do you fellows get off posting all this water?" I wanted to know.

"Where do I get off? I own this ground! This property belonged to my father a long time before you were born!"

"That might be, but the State stocks this river with fish—fish bought by such fishermen who buy licenses, like myself, for example. You may own the ground but you don't own the fish!"

"The fish are on my property, aren't they? Well, then they are my property also!"

And that constituted another fruitless argument. I returned to the road and started on downstream, intending to follow the barbed wire fence until it ended and then begin to

After a good morning's fishing, we decided we had had our share, and went over to my camp to cook dinner.

fish, if that terminated posted ground. The road was about fifty feet above the stream along the particular stretch and there were no camping places, which was some consolation. When I reached the end of the fence I slid down the steep bank to the water. And there I met Al.

Al was sitting under a huge yellow pine, smoking his curved stem pipe in a meditative fashion. We exchanged salutations and then the customary question:

"Had any luck?"

"Nothing but bad," I said.

"Same here," said he. "Get run out of posted property where there are fish and can't catch any from the parts of the stream that aren't posted."

That had been my luck exactly and we sat for several minutes condoling with each other. Then a fish rose noisily in the water ahead and struck at a floating insect.

"Maybe they're going to do a little hitting," Al said.

Deciding to find out, we waded out into the river, Al taking one side and I the other. I admired Al's technique—so smooth and effortless. He had fly casting down to a fine art. I watched him flick his hackles across the water, saw them drop lightly on the crest of a tiny wave just at the point of a boulder, and then the vicious swirling of water as a rainbow struck.

Al grinned back at me. "Nice one," he said.

He played him carefully, eventually drawing him to shallow water, where he got him ashore and safely into his creel. Not a large rainbow—twelve inches or so. But in the cold waters of the Pecos a twelve incher means plenty of scrap. So down stream we started, but only to learn that we were going to earn every fish we creeled. Al took another from the white capped water of some rapids and I drew a nice one from a stock-still pool beneath a rock. We fished slowly and carefully, whipping every foot of the river and passing up nothing.

Our baskets filled reluctantly, and after we had fished an hour we each had four fish. The last thirty minutes proved to be even slower than the first and we stopped again.

"They've quit hitting," Al said, lighting his pipe.

"I think we should use something darker," I guessed. "I'm going to try a black gnat."

The black gnat fooled one more fish and promptly lost its appeal.

"You know what's wrong?" Al began.

"Everybody fishes here," I suggested.

"Exactly. There are about three or four stretches between Pecos and Irvin's place that can be fished—the rest is posted. Furthermore, a couple of hundred guys like you and me, who are not among the chosen few who are allowed on private property, fish them often and fish them hard. And on top of that, this is the one stretch where there are no camping sites. Every man who knows anything about fishing comes to this stretch."

And Al was right. But what could we do about it? Nothing but go on downstream, whipping every foot of water, trying to improve our efforts. It was evident that if a fish was to be taken the fisherman had to try twice as hard to fool him.

Flies were worthless so I changed to a small Colorado spinner. The rainbows might not be hungry for flies but they might take a crack at a shining spinner. My first cast brought results—a fingerling that might have been four inches long. The second and third attempt went unnoticed, but on the fourth I felt a good one. He struck it once, knocking it clear of the water. But he failed to snag. Again I tried. No response. Again, and this time he took it for his home between the boulders. For the second time that morning my

(*Continuing on page* 190)

Down stream we started, fishing slowly and carefully, whipping every foot of the river and passing up nothing. We had to earn every fish we creeled.

# FIRE AND WATER!

## HOW THE C.C.C. IS SOLVING THESE ACUTE CONSERVATION PROBLEMS IN CALIFORNIA

By R. W. AYRES

FIFTY years ago an American pioneer by the name of Jack Talbot deliberately set fire to the chaparral covered mountains in southern California. Talbot was a settler with a few head of stock. He had an idea that he would improve the pasturage if he burnt off the soil cover which was to him nothing but apparently worthless brush. His idea resulted in floods the following winter that cost $5,000,000 to repair. But this sum is a mere atom of the wealth in soil, water and forests destroyed by all the Jack Talbots of the nation.

Talbot, the pioneer, no doubt had all the admirable traits of courage, self-reliance and enterprise with which history has endowed the winners of the West. So it is somewhat presumptuous to suggest that he and other American pioneers had other characteristics not so admirable for which this generation and generations to come will have to pay. One of these traits was the fondness for uncontrolled fire as a means of clearing land, whether for agriculture or pasturage for their cattle and sheep. These first settlers were the natural product of a continent of vast and seemingly unlimited resources of soil, water, forests and grazing lands. They were restless, impatient of restraint, improvident, and they regarded these bounties of nature as something for their own particular benefit. Talbot, with his livestock and his belief in the usefulness of uncontrolled fire as an aid to civilization, exemplifies one of the chief reasons why the nation now is compelled to put an army to work to repair the damage done by several generations of pioneers.

The Civilian Conservation Corps has been described as a forestry army, although there is nothing military about its organization except the officers of the United States Army who are doing such good work in caring for the 312,000 members of the corps. The boys call themselves "brush marines," or "peavies," or "woodpeckers," or other nicknames connected with woodcraft. But their real mission is much broader. When they go forth each day from their 1,435 camps, armed with shovel, ax and brush hooks, and supported by the artillery of tractors, road graders and compressed air drills, they are working to save not only the forests but other resources intimately connected with them, and upon which the forests themselves depend. These are water and soil, and of these the good earth is most important.

In the last analysis man is a creature of the soil. He must eat to live and without soil he could not exist. Earth, land and soil all mean the same thing; the world, the nation, the farm, in fact existence. This precious covering for the raw

Photograph by Arthur F. Pillsbury

**The boys of the C.C.C. are working, not only to save the forests, but water and soil and related resources—and of these the good earth is most important. These lads are starting a check dam in a side gully on the Mendocino National Forest in California. Their camp is seen in the background.**

granite crust of the planet is formed at the rate of one foot every 10,000 years. It absorbs rain and melting snows and gives out the water in the form of springs, streams and rivers. Undisturbed by man it is covered with grass, shrubs and forests, according to the average temperature, rainfall and nature of the soil. Man began to disturb this soil and soil cover first by pasturing his flocks and herds, next by tilling and farming, and lastly by removing the forest cover. Every one of these activities has had an effect on soil—and seldom has it been beneficial.

If the soil cover is destroyed, whether it be forests, shrubs, or grasses, the erosive forces of water are let loose which, if unchecked, will in time destroy not only the soils but the water supplies as well.

The forests, then, are only one form of the covers which protect the earth. Another is the sod formed from the interlacing roots of grasses found in meadows and on the great plains. Still another is the chaparral, a growth composed of many species of shrubs covering the mountains and foothills of the West. In the southern part of California it is called "elfin forests." If the people of the nation had been wise in the use of soil coverings of forests and grazing lands, and expert in agricultural methods, it would not now be necessary to launch this conservation army to repair the damages done.

Photograph by Arthur F. Pillsbury

**In battling the erosive forces of water on the San Bernardino Forest in California, these "brush marines" have built a loose rock check dam, which has withstood a flood and filled one foot of earth in back of the dam.**

Last summer the nation celebrated a Century of Progress. It was an exhibition of accomplishments along mechanical, industrial and scientific lines. Yet in that same century fifty million acres of once tilled land have been abandoned, partly because of unwise tillage methods, and partly because of the destruction of the soil cover either by overgrazing or forest fires. The forests from over half of the original forested lands have been cut, and cutting is going on now at the rate of 10,000,000 acres annually. At the same time forestry is being practiced on only one-twentieth of this area. Livestock is grazing on 334,000,000 acres but only one-eighth of this area is managed so as to conserve plant growth. Every year an average of 186,000 fires burn over 4,476,000 acres. As a result of all these different ways of mistreating the soil and soil cover, it is estimated that there is an annual soil wastage of 1,500,000,000 tons of soil matter containing 126,000,000,000 pounds of plant food worth $2,000,000,000. The soil has been allowed to retrogress while the nation was making progress with the more superficial side of civilization. Soil wastage in the eastern states is largely due to improper methods of tilling the earth. In the open range areas of the western grazing lands it is due to improper methods of handling livestock which results in overgrazing and the tramping out of the soil cover. In the Pacific Coast region, and particularly in California, forest fires are the chief cause. The same climatic conditions that give California a practically rainless period from June to October also produce fire hazards. The grass of the lowlands, the chaparral of the foothills and of the southern mountain ranges, the forests of the Sierra and northern Coast Ranges become like tinder. Overgrazing has done its part in disturbing the normal flow of water, especially in the gently sloping meadows in the northern part of the State. In the past they have been trampled and the cover of grasses killed. Rain and melting snows have worn deep gullies that have been washed into miniature canyons. Side gullies have fingered out from the main channel and all the while the moisture from the surrounding soil has drained away. Beauty spots where the oxen of weary emigrant grazed knee deep in lush grass are now gravelly flats either bare of growth or carrying a crop of worthless weeds. And through them run deep cuts in which members of the C.C.C. are now building their dams.

California's conservation problems therefore have to do with the ancient elements of fire and water. Perhaps in no other State in the union is the need for water so acute as here. Except in the northwest corner along the coast at the Oregon line, no rainfall is available during the growing season for the field, fruit and vegetable crops valued annually at around $500,000,000 and constituting about twenty-five per cent of the State's income. There are no large rivers to supply the large centers of population with domestic and industrial water or to irrigate the 4,000,000 acres of valuable fruit and vegetable land. San Francisco, Oakland and Sacramento all draw their water from mountain reservoirs, after piping it 150 miles. Los Angeles long ago outgrew the water supply from the nearby hills and built an aqueduct 230 miles to tap water in the distant Sierra Nevada range. Now it is at work on a still more extensive water supply. The Southern Coastal Basin, comprising the drainage of the Los Angeles, San Gabriel and Santa Ana Rivers, contains one-half the population of the State, living on 1.4 per cent of the area, and has less than one per cent of the water supply. In this region the value of some of the irrigated fruit lands is such that each acre of the local mountain watershed represents an investment of $1,000. A recent fire destroyed the chaparral on 3,000 acres in the Angeles

National Forest and the damage to the watershed was estimated to be $750,000.

Northern California has not the combination of population and irrigated lands found south of the Tehachapi Mountains, nor the concentrated demand for water supplies. Except for the San Francisco Bay region the towns and irrigated lands are scattered through the 400 mile basin drained by the Sacramento and San Joaquin Rivers. They are not squeezed between the Pacific and the precipitous slopes of the Coast Range. Since the days of Forty-Nine, the Sacramento and the San Joaquin Rivers have been navigable highways to the great valley and have supplied water for irrigation and domestic purposes. But lately navigation has been difficult in dry years and so much water is taken from the rivers and their tributaries that the salt of the ocean is creeping further and further up, spoiling the drinking water and threatening the irrigated fields. Soon the citizens are to vote on what is known as the Central Valley Project of the State Water Plan. The features of this project are flood control dams at the headwaters of the Sacramento and San Joaquin Rivers and a system of canals, locks, dams, pumping plants and hydro-electric power houses which will protect 400,000 acres from salt ruination, restore 200,000 more acres to cultivation, extend and insure navigation and be of economic value in other ways.

Photograph by Wallace Hutchinson

**Fire and water are the sworn enemies of the forest and, in the Pacific Coast region, forest fires are the great menace. Here, on the Cleveland National Forest, C.C.C. workers — "Soldiers of the Shield" — are building a first line of defense, — a fire-break on Aguanaga Mountain.**

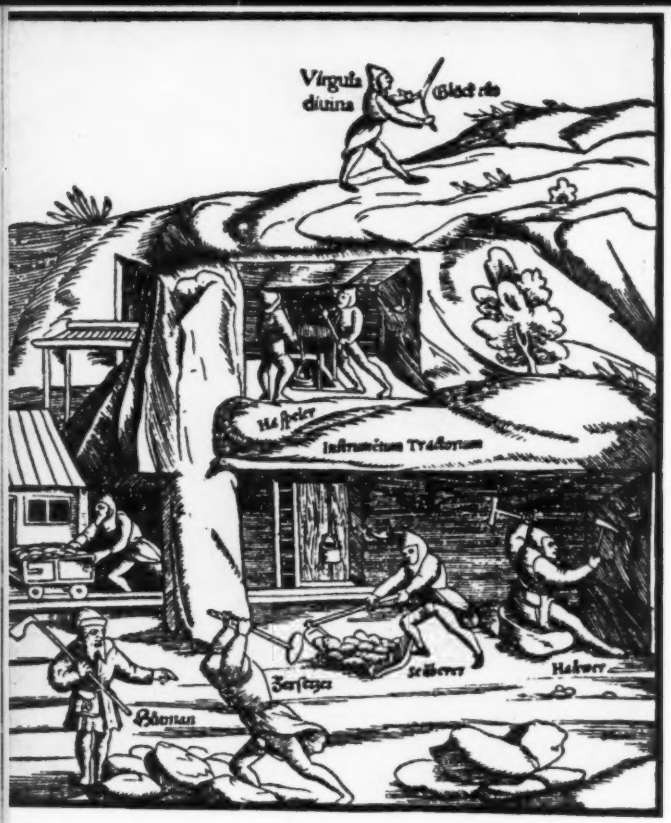
So it is that the Civilian Conservation Corps is not alone a forestry army. One might call it the Soil Conservation Army, for all their work, especially in California, has to do with the protection of the different classes of soil coverings,—of grass, chaparral and forests. Their squad leaders are experienced woodsmen and stockmen, their field officers are foresters and experts from seven other bureaus of the Department of Agriculture, and the campaigns they are waging have been mapped out by technicians who have a scientific knowledge of soils, waters, forests and grazing lands.

It is a young, cheerful army, suntanned and husky. Its slogan is "We can take it!" and it fights forest fires with the same high morale that it builds firebreaks and roads and performs thirty-odd kinds of conservation work. About 36,000 members of the Corps were in the National Forests, National Parks, State lands and parks of California in the fall of 1933. One could find them last summer stripped to the waist working under the

(*Continuing on page* 170)

Photograph by Wallace Hutchinson

**A fine piece of work well done—truck trail construction and a completed fire-break, built by the boys of the Corps on the Angeles National Forest in California.**




HERE IS A MODERN "ALICE IN WONDERLAND" TALE TREATING NOT OF CABBAGES AND KINGS BUT OF EARTH RAYS, DIVINING RODS AND MYSTERIOUS THINGS. BEFORE DECIDING UPON ITS PUBLICATION, THE EDITOR SUBMITTED IT TO A NUMBER OF MEN OF AMERICAN SCIENCE FOR READING. THE RESPONSE WAS VIRTUALLY UNANIMOUS —"HIGHLY INTERESTING AND SUGGESTIVE BUT NOT PROVEN SCIENTIFICALLY."

DO EARTH RAYS ACTUALLY EXIST? DO THEY ACCOUNT FOR SOME OF THE VAGARIES OF PLANT AND ANIMAL LIFE? DO THEY HOLD THE SECRET OF THE AGE-OLD "MAGIC ROD"—THE THEORY OF "DOWSING," ACCEPTED AND DISCARDED BY DIFFERENT SCHOOLS OF THOUGHT FOR THE PAST FIVE CENTURIES? AND, FINALLY, ARE THEY SHAKING THE DOORS OF A NEW WORLD FOR SCIENCE TO LIGHT? THESE ARE SOME OF THE QUESTIONS SUGGESTED BY MR. GONZENBACH'S ARTICLE WHICH SPEAKS FOR ITSELF.

THE QUAINT ILLUSTRATION OF "DOWSING" OVER WHICH CONTROVERSY HAS WAGED DOWN THROUGH THE CENTURIES IS COPIED FROM SEBASTIAN MUNSTER'S "COSMOGRAPHIA UNIVERSALIS"—PUBLISHED IN 1550, AND IS THE EARLIEST KNOWN PICTURE OF A DOWSER.—*Editor.*

# NEW LIGHT ON OLD TREE MYSTERIES

## By ERNEST GONZENBACH

EVERY forester knows of spots in the woods where trees do not grow, or if they grow, do not thrive. They are natural "openings" where for some unaccountable reason forest trees never achieve normal size, remain stunted or are absent entirely. There seems to be no explanation for this phenomenon; mostly we dismiss the subject from our minds with some vague reference to "dead spots" in the soil.

Exactly the same thing happens in fruit orchards, more often than is generally realized. Almost every extensive fruit plantation holds one or more "dead spots" where the fruit trees lag behind in their growth, or they die altogether for no visible reason. Several years ago one of my fruit growing friends showed me such a place in his apple orchard; there was a long narrow strip on a hillside where the trees had been replanted several times at intervals of two or three years, without corresponding improvement in the growth of the replacements. I laughed at his superstitious hints at supernatural influences and told him to use plenty of manure around the replanted trees. This he did, without getting any corresponding benefit.

From time to time I have had simlar experiences even among shade and ornamental trees and shrubbery growing in well landscaped grounds of fine estates. One of my clients planted a long row of over a hundred Lombardy poplars to serve as a screen to hide an unpleasing vista. At three places in the long line the trees persistently refused to grow as rapidly as did the other trees, and he went to some expense to replace the laggards with healthy specimens to match the rest of the row. But the replanted trees never caught up with the balance and I thought that the remedy was to plant trees larger than the normally growing ones, so that the set-back due to replanting eventually would bring the trees to uniform size. The idea did not work; the replanted trees were soon outdistanced by the normally growing ones and the three gaps in that screen of poplars are still there to this day! The same thing has happened to hedges, particularly to privet hedges, so often that gaps in their ranks have become commonplace and we pay little attention to them.

Still more mysterious are the "slime-fluxing" tree cavities which every arborist now and then tries to hide from the knowledge of his competitors, although I do not know of any individual or firm who does not at some time have to meet that problem. If there is any plausible explanation of these cavities that refuse to heal properly, I confess ignorance of it. Some three or four years ago we had a typical case of the kind. We had repaired a number of trees by means of cavity treatments and all of them responded well, with one exception, which refused to heal as it should and continued to discharge slime-flux from the wound. The next year we pulled out the filling material, reshaped the cavity and gouged out new channels, doing all the things that skilled tree-men do in such cases. It continued to discharge, and nothing we have been able to do since has helped matters. In the meantime all of the

dozen or more similar treatments have grown new bark over the fillings and are doing well.

Now comes new light on these puzzling tree mysteries from an unexpected and amazing angle! Prepare to leap into deep scientific channels that presently will lead you to a ludicrous anticlimax. In 1931 a French scientist of the Pasteur Institute in Paris published a book entitled *le secret de la vie*, the secret of life. The book is sponsored by no less an authority than Professor D'Arsonval, whose name banishes any attempts at levity over the subject. The writer, however, is not D'Arsonval, but one Georges Lakhovsky, a scientist of no mean repute on his own account. You can not wave aside two such names, no matter how little you may agree with them.

Lakhovsky seeks to prove,—and he is convincing,—that life originated in and is continued by living cells, each of which gives off ether waves of certain frequencies; that the whole universe is one seething mass of invisible rays with an enormous range of wave lengths, from fractions of a millimeter and trillions of cycles per second to those of kilometer lengths and low frequencies. If the book has been translated into English I have not heard of it, but French or English, it is not a book to be lightly read of a summer evening!

He gives some startling proofs, among them the experiment he made with carrier-pigeons, which he released at a certain place from which, to reach their home loft, they had to fly over the towers of a radio sending station. The birds circled and found their direction, then, when they were passing over the radio towers, he charged the antennae with waves of a certain frequency, and immediately the homing birds lost their sense of direction and started to fly wildly in all directions! When the current was turned off, the birds circled again, picked up their direction and proceeded to fly home!

When you have finished reading Lakhovsky's book there will be little doubt left in your mind that the so-called "instinct" of birds, which enables them to fly straight across continents and oceans, to some definite objective point thousands of miles away, is nothing more than receptivity to the radio waves emanating from the objective, and which their organs are able to receive. But that is not all. The book undertakes to prove, by words and photographs, that these waves can and do influence plants, animals and human beings! Space does not permit even hinting at all the interesting things he establishes, for there is a still later book that must claim our attention, more amazing than Lakhovsky's secret of life, and having a more direct bearing on trees.

It is the book published in 1932 by a German Baron, Gustav Freiherr von Pohl, with a typically German title: *Erdstrahlen als Krankheitserreger*, meaning "Earth Rays as Causes of Disease." Von Pohl picks up the ether rays pretty much where Lakhovsky left them and goes a step farther, several steps in fact. Apparently Professor Piccard started it all with his explorations into the realms of cosmic rays. Some of the scientists reasoned that if the sun and the planets gave off cosmic rays, then the earth, being one of the planets, must in the nature of things give off similar rays and send them into the ether. How they proceeded to prove their case is not for these pages, the point is that they were found and Baron von Pohl names them "earth rays."

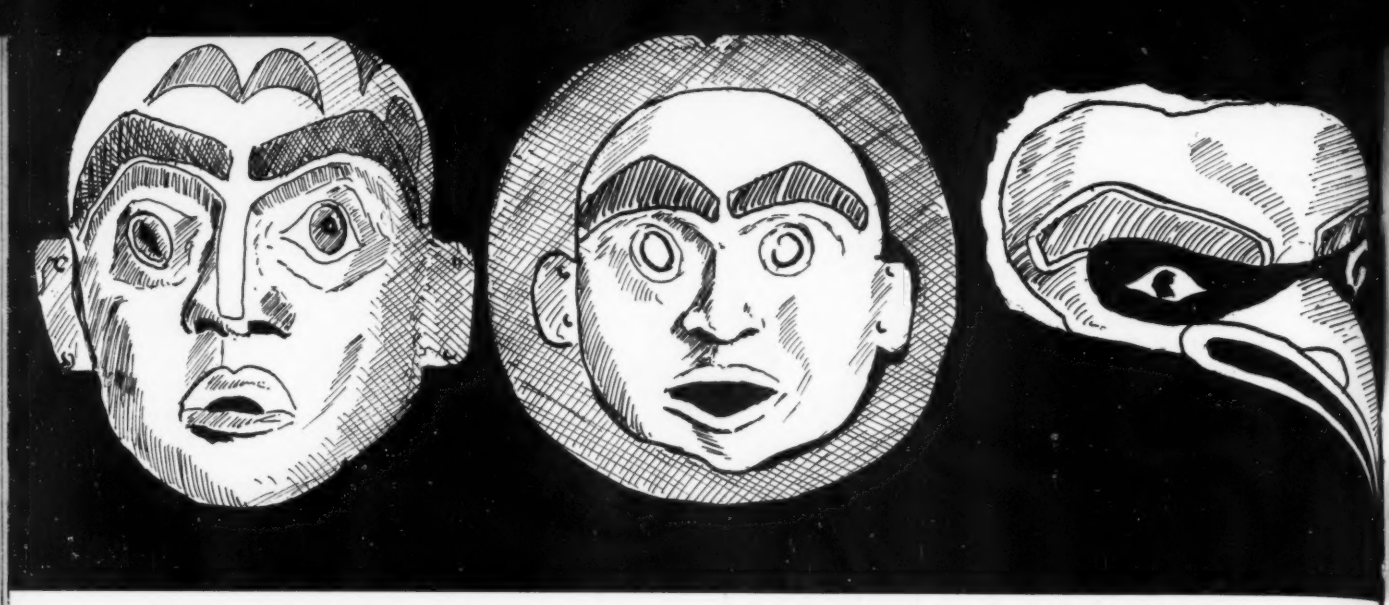
But these earth rays are not uniform over the surface of the earth. They occur in narrow ribbons and bands, often criss-crossing each other, and mostly not over ten or twenty feet in width, although now and then they have been found sixty feet or more in width. But why that criss-crossing and the narrow ribbons, when in theory the rays hail from the fluid interior of the earth, known as "magma," where they are supposed to originate with uniform density? The answer was found to lie in the network of mineral and water veins which are everywhere under the earth's surface. These, being good electrical conductors, deflect the rays from their natural course and concentrate their effect; the earth rays rise vertically above these channels.

From that starting point, Baron von Pohl's book begins to look like part of Einstein's theory, but it is in fact quite simple. Still, I do not recommand it to any reader who is not prepared to gasp for air after every chapter, not so much because of the text, but because of its startling revelations. With that typically German exactitude that accepts no facts unless proven (*Continuing on page* 189)

**SAID GEORGIUS AGRICOLA, IN HIS MONUMENTAL LATIN TREATISE, *DE RE METALLIS*, PRINTED IN 1556:**

**"THERE ARE MANY GREAT CONTENTIONS BETWEEN MINERS CONCERNING THE FORKED TWIG, FOR SOME SAY IT IS OF THE GREATEST USE IN DISCOVERING VEINS AND OTHERS DENY IT. . . . SINCE THIS MATTER REMAINS IN DISPUTE . . . . I CONSIDER IT OUGHT TO BE EXAMINED ON ITS OWN MERITS . . . . THE ANCIENTS, BY MEANS OF THE DIVINING ROD, NOT ONLY PROCURED THOSE THINGS NECESSARY FOR A LIVELIHOOD OR FOR LUXURY, BUT THEY WERE ALSO ABLE TO ALTER THE FORMS OF THINGS BY IT."**

**(Translation from the original Latin. Illustration appearing on page 28.)**



Much legendary and traditional lore attaches to the ceremonial masks, used chiefly at the winter festivals, initiation ceremonies, potlatches or feasts. The specimens sketched here—relics of a lost art—are extremely interesting. The first is a Kwakiutl mask, is very old and is known as Chief of the Under Sea. The second is also a Kwakiutl mask, and very old. It was found in 1893. Though it belongs to the Sun Dance, it represents the Moon and is most beautiful in coloring and execution. The third is a Tsimshian or Haida mask, representing an eagle head. The original is an example of almost perfect workmanship and fine polishing.

# NATIVE CEDAR--AN ART MEDIUM

By GENEVA LENT

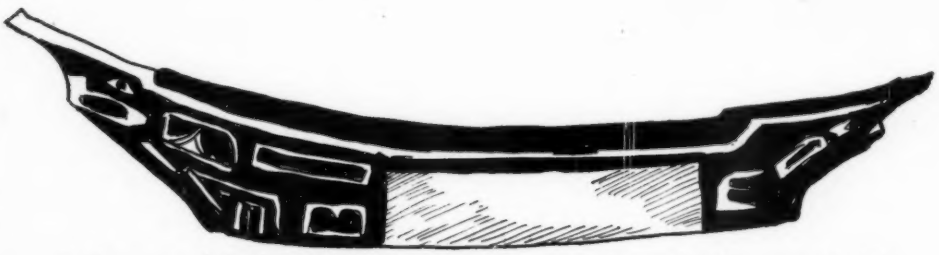
With Drawings by the Author and half-tones by courtesy of the United States National Museum

THE coastal tribes of the Indians of British Columbia once possessed a highly developed art culture. Like many primitive people they revealed a surprising ability to utilize those substances which nature had provided so abundantly in their particular locality. Using as a medium their native cedar which grows to such great size and abundance on the rain-swept slopes of the Canadian province, they created articles of utility and artistic merit with amazing ingeniousness.

The great cedars along with a few other species, were truly a gift of the gods to these Indians. They fashioned their existence around them. Their unique houses, sometimes highly decorated, were built of cedar logs. They utilized the wood in their totem poles, their masks, their dishes, their boxes. But it was in their canoes, splendid sea-worthy craft with a beauty of line unsurpassed, that much of their art found expression.

A decorated Haida box, painted and carved in a design typical of the flattened conventional treatment of the Sea-bear and Killer Whale subjects. Usually owned by Chiefs, these boxes were used for the storage of robes and ceremonial objects. They were usually made from one long piece of wood, steamed and bent at three corners and laced or pegged at the fourth.

Fish was their main article of diet, and they must go where fish were plentiful. Too, they were a war-like people of many clans and customs. Consequently, canoes were a very essential part of their existence, as well as a source of great and justifiable pride. On them depended their safety and livelihood. And on them they gave expression to their artistic cravings in truly fine designs in



**In the canoes of the Coastal tribes, much of their art was expressed. They were splendid, sea-worthy craft, with beautiful lines, strikingly carved and colored to pay tribute to the powerful spirits of the sea—the Killer Whale, the Thunder Bird and the Sea Bear. This sketches a typical canoe with projecting bow and stern, of the Indians of the Northern British Columbia Coast.**

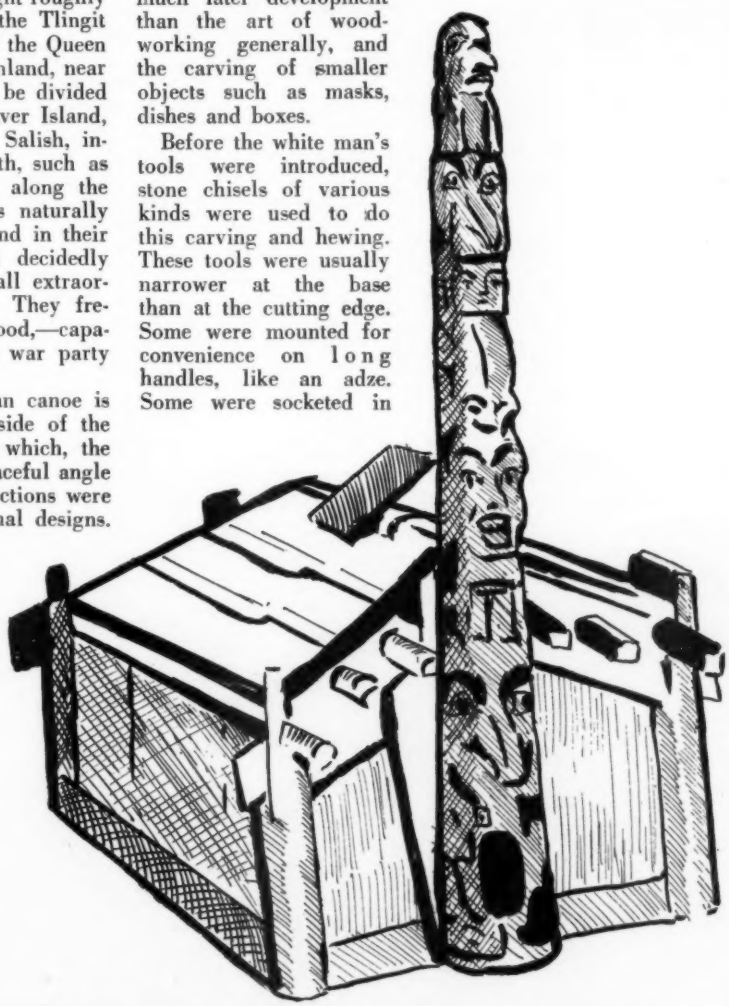
carving and color, and at the same time paying tribute to the powerful spirits of the sea, the killer-whale, the thunder bird, and the sea bear.

The Indians of the British Columbia coast might roughly be divided into three great bodies of people—the Tlingit of Alaska and neighboring islands, the Haida of the Queen Charlotte Islands, and the Tsimshian of the mainland, near the Naas and Skeena Rivers. Again they may be divided into linguistic classes—the Kwakiutl of Vancouver Island, the Nootka of western Vancouver Island, the Salish, including the tribes of the mainland farther south, such as the Bella Coola, and those people who lived along the Thompson and Fraser Rivers. Their locations naturally produced differences in their mode of living and in their art traditions; not fundamental, perhaps, yet decidedly noticeable to the student. These people were all extraordinarily proud and ambitious in their way. They frequently quarreled. Their war canoes must be good,—capable of holding as many as sixty men when a war party went to fight in the waters of an enemy tribe.

The technique of making a west coast Indian canoe is interesting to those who appreciate the craft side of the study. There were two distinct types, one of which, the northern type, had bow and stern raised at a graceful angle and projecting out over the water. These projections were the portions carved and painted with traditional designs. It has been said these canoes were used in rough ocean water where their projecting ends insured safety against large waves. The other, the southern type of canoe, used by the tribes of Vancouver Island, the Nootkas and Kwakiutls, had a vertical stern and projecting bow, and was not so beautiful as the northern type. Both types varied in size. They were built to carry one, two, or three men, or the larger war parties. The paddles were finely polished, with a lanceolate blade to cut the water. There was a cross piece on the very end of the handle, resembling a crutch.

To make these canoes with primitive tools was a fine accomplishment. The Indians selected a tree of proper proportions and soundness, which was carefully felled and dragged, in some cases, a considerable distance to the place where it was to be shaped and carved. The outside was "adzed" into a semblance of the canoe's future shape. Then the inside was hollowed by hewing out. Often fire was used to char the wood so that it might more easily be removed. To bow the sides of the craft into graceful curves, the partially completed canoe was half filled with water and hot stones dropped into it. In this manner the wood would steam and become flexible. Cross pieces of wood were then placed as wedges to spread the boat to the desired shape. Later the bows were carved, and, in some cases, separately attached to the main body of the canoe by "sewing." While totem poles are perhaps the most universally familiar type of West Coast Indian art, it is generally conceded by authorities that the carving of totem poles is relatively a much later development than the art of woodworking generally, and the carving of smaller objects such as masks, dishes and boxes.

Before the white man's tools were introduced, stone chisels of various kinds were used to do this carving and hewing. These tools were usually narrower at the base than at the cutting edge. Some were mounted for convenience on long handles, like an adze. Some were socketed in



**A small model of a Chief's house, showing the pole representing the hereditary crests of the owners. These houses, made of hewn cedar, were usually from forty to fifty-five feet in length; from thirty-five to fifty-five feet wide and twelve to nineteen feet high. The totem poles ran from eighteen to fifty-five feet high, with the doorway in the base.**

**The powerful art of these primitive people is brought out in striking detail in this close-up of carved figures from Massett.**

handles of horn. They had no axes until the white man came, and yet it is remarkable how they felled trees and split rough boards for their dwellings and boxes. To obtain a high polish on their work, and to remove rough edges, they used a curved, long-bladed knife, then either a smooth piece of standstone, as sand paper is now used, or the dried skin of dog-fish or shark. Even soft cedar fibers and grass were used to bring up a nicely polished surface. Some of the best and oldest masks have the finish and feel of fine old ebony.

The bending of wood was a peculiar accomplishment, used especially in the making of large boxes. A board was split and carefully measured with a cedar measuring stick, especially kept for the purpose. Shallow ditches were then dug in the earthen floor of the house and the board placed in it, after which hot stones were thrown in. Grass was then spread over the board. When the steam had done its work the board was bent to a right angle and clamps of wood placed on it. This was done three times. Holes were drilled for the fourth corner where the ends of the bent board met. Wooden pegs were either driven through these or it was laced with thongs.

"Sewing" wood was one of their special works. Threads of spruce root were also used as well as thongs. They mended cracks in the canoes by sewing. These chests or boxes so made by bending wood were decorated with the owner's crests or traditional designs. They were used by the chiefs of the tribe. And one authority says that it was the exclusive right of the chief to sit and dance on these boxes at their winter festivals. The boxes were also used for storage purposes for ceremonial robes, their peculiarly woven blankets and other such treasured objects. Made usually of yellow cedar or hemlock, they were also used for the storing of such foods as dried roots, berries, fish and fish eggs. Wooden dishes for serving foods were made, usually of alder wood, a tree which grows to quite large proportions in British Columbia. Alder was also used for some of their dance masks, especially those representing the "Black Man of the Woods." The dishes were hewn out of the wood, and then hollowed and burnt out as were the canoes. Many were beautifully decorated. One of the most outstanding forms of their art was the dance mask,—used at the winter festivals, initiation ceremonies into their secret societies, and at potlatches or feasts. There is much interesting legend and traditional

**Indian graves in a native burial place. The memorial columns are of great interest. They are Tlingit, being plain—surmounted by bird and animal figures, with carved figurines at the bottom. The Haida memorial poles are heavily and elaborately carved. The burial houses shown are native, the latticed pickets at the sides indicating the Russian influence.**

lore concerning these interesting specimens of a lost art.

The lengthy winter festivals were an important part of West Coast Indian life of a century ago. There was a definite ritual for every clan and every dance, the various masks worn representing inherited family emblems, such as the wolf, the eagle, the raven, the beaver, the hawk, or the ever important thunder bird. Some of them also represented traditional and imaginary beings, such as the "Wild Man" or the "Chief of the Under Sea," or the "Crying Woman." Each has its own fascinating story and significance. These masks were carved by their best carvers, and expressed much individuality; some striking a decided humorous note, others causing one to wonder where the artist gained his inspiration. They were also sometimes cleverly mechanized by means of hidden strings, movable eyes and jaws, and the addition of a whistle to make them more awe-inspiring.

It has been remarked by such an authority as Dr. Marius Barbeau, Curator-in-Chief of the National Museum, at Ottawa, that the origin of these strange carved objects, such as ceremonial dance masks, goes back to remote and prehistoric times. They were noted by the earliest explorers on the west coast in the 18th century, as were chests and dishes. But strangely enough no mention was made of totem poles, or mortuary poles, although they saw carved house poles.

There were two outstanding forms of poles—the carved house pole and the totem pole proper, used to commemorate a dead chief. The latter was a later development of the former. Carved posts were also used as corner posts in the large semi-communal houses. On these rested the large roof beams. House-front poles were used to stand directly in front of the chief's house and proclaimed to his interested neighbors and rivals his importance and lineage. Through the base of these poles a hole was left as entrance to the house.

Dr. Barbeau says: "The art of carving poles is not nearly as ancient as is generally believed. Its growth to its present proportions is largely confined to the 19th century, after the traders had introduced European tools, the steel ax, the adze, the curved knife, in large numbers among the natives. The detached memorial columns followed years after the house-front pole. They appeared about 1840."

The story of the development of the totem pole is of great interest. The natives (*Continuing on page* 192)

**An Indian's house at Massett, on Queen Charlotte Island. The central pole illustrates the blood legend of the Haida.**

**An abandoned Indian village. The houses were placed irregularly but facing the shelving beach. The memorial or totem poles at the front of the houses were sometimes at the very water's edge where the salt water served to preserve the wood at the base of the poles from decay. Those back from the beach are often found rotted at the base.**

# EDITORIAL

## A Cabinet Committee on Wildlife?

IN an otherwise excellent report, the President's Committee on Wildlife Restoration recently named to suggest a national wildlife program has made one proposal that invites critical questioning. In suggesting a plan for better coordination of the government's scattered activities relating to the perpetuation of birds and wild animals, it has been led, inadvertently perhaps, into the highly intricate and controversial cross-currents of administrative reorganization of virtually all conservation activities. It has sought to untie in part at least a Gordian knot which has defied many Congresses, many administrations and many Presidents. This may well prove an unfortunate feature of the committee's labors from the standpoint of endorsement of its report as a whole, because the coordinating plan it proposes is of doubtful soundness and workability.

One of the easiest and seemingly most expedient ways of attempting solution of a problem in Washington is by way of committee or commission machinery. That is the course the committee has followed to unify and coordinate federal wildlife activities. It proposes that the Secretaries of Agriculture, Interior and Commerce, through whose departments the government's conservation bureaus are most largely distributed, be made by executive order of the President a sort of cabinet committee on wildlife with a "restoration commissioner," to be appointed by the committee, in whom would be lodged the responsibility for supervising and coordinating the wildlife restoration work in the different bureaus dealing with federal parks, federal forests, reclamation, fisheries, wildlife, erosion control, public domain, emergency conservation work and mosquito control.

The plan on paper will doubtless appeal to many as a reasonable and logical one. There can be no doubt that committee or commission organization often serves a highly useful purpose in the planning field of government. But in this instance the proposal deals directly with the administrative conduct of government business traditionally fixed in point of centralized responsibility. In theory it would pool to a large degree the administrative supervision and responsibility of three department heads in one office, which would call for a man not only competent to pass upon the relationships of all forms of wildlife from mosquitoes to kodiak bear, but upon a multitude of other subjects ranging from nature study to range control, forestry, engineering and social and economic land planning.

The restoration commissioner would be called upon to adjudicate plans and policies that necessarily integrate into conservation activities outside his province of wildlife and to settle differences arising between bureaus in different departments. Failing in this, his administrative recourse would be to have the cabinet committee sit in judgment and render final decision. Administrative responsibility would thus be placed upon the three department heads over questions and situations often wholly outside the department fields of two of them and involving problems with which they are inadequately informed. Bureau heads on the other hand in coordinating their wildlife activities with other conservation work of their departments would be placed in the position of serving three masters, the restoration commissioner, the cabinet committee and the secretary of their own department. In actual practice, therefore, the plan would tend to dissipate centralized responsibility and administration.

To one who has observed for a considerable period of years the human and political relationships of bureau and department business the plan even as a compromising expediency does not promise the results sought. Furthermore, its fundamental soundness may be challenged by applying the same theory of administrative government to each of the other conservation or related activities spread through the several departments. Conduct of department business would obviously become entangled in committee action by the heads of departments, already hard pressed for time, and administrative delays and chaos would inevitably result.

Coordination of federal conservation is much to be wished for, but we believe it would be a serious mistake to sacrifice centralized administration to the wish. Temporizing with reorganization has too often proven a leap from bad to worse. The problem calls for a bolder approach and a well studied grouping of different bureaus and activities according to their primary objectives with clearly centralized administration. Lacking that, it would seem the part of wisdom to leave the bureaus as they are and have the Cabinet Officers continue to coordinate the work of their respective departments by informal personal conferences.

# "WHAT THE C.C.C. HAS DONE FOR ME"

**AMERICAN FORESTS here presents the fourth of a series of stories written by enrolled members of the Civilian Conservation Corps and selected as the prize winning contributions in the Magazine's recently concluded contest on the subject "What the Civilian Conservation Corps Has Done for Me." Limited to enrolled members of the Corps and to manuscripts of one thousand words or less, the contest brought hundreds of stories from the fifteen hundred camps which dot the country from coast to coast.**

**These stories form a remarkable narrative of human experiences and are unquestionably the best spoken evidence thus far available of the real value of the Civilian Conservation Corps to the youth of America and to the thousands of homes which they left for the "road" in search of work to help distressed parents.**

**The five prize-winning stories were published in the January and February issues. Two of the stories awarded "Honorable Mention" are published in this issue. Brief biographical sketches of the authors are given on page 144. In the May number and following issues there will appear other stories selected as meriting honorable mention. In accordance with the contest announcement, awards have been based upon the story and not its literary construction. All manuscripts, therefore, are being published as written and without editing.—*Editor.***

## 'IT HAS TAKEN ME OFF THE ROAD'


### By Frank Ranney

Camp 819, Civilian Conservation Corps
GRAND CANYON, ARIZONA


"THE road is a vicious factory, and its chief products are rascals and corpses."

"Oh, it's not so bad," protests Willie. "Tramping's lots of fun to me."

Willie has ridden a freight train all the way from Peru, Indiana, to Kokomo, Indiana, to visit Aunt Martha and knows all about it.

To Willie, as to romantic clerks and clubwomen, the road is a world of its own, a world of sunlit fields and cool swimming holes, of devil-may-care freedom and dashing adventure—a world peopled by swaggering, sateen shirted vagabonds who appreciate more a cloud o'er the brow of a hill than a square meal under the belt. Well, I've been on the road, and I find it no place for a person the nourishment of whose brain requires a peanut a day or more. Fade out, winding paths and purple mountains, and enter the road of the hobo and tramp—not that of the romantic vagabond who croons behind a megaphone or lies in bed writing adventure stories.

**Frank Ranney**

The road is sordid and merciless, a kaleidoscope of pounding engines and death dealing rails, of filthy box cars and vermin ridden lock-ups, of pitiful hobo camps, and sorry figures huddled around fires of stolen ties. The road is a nightmare of hunger, and ridicule, and abuse; of breadlines, back

doors, of beggary and worse, and mission soup brewed of water and platitudes.

I was part of that road; not a hero, but a shabby youth—bewildered—unwanted. Did I starve? No, but I did not wax fat. Sometimes the exigencies of travel necessitated postponing meals for a day or so, and I doubt not that in a diet consisting chiefly of bean soup, bread, and "coffee and" numerous vitamines from A to Z are sadly lacking. And hopping about all night in a freezing box car with no shelter but the denim on your back is hardly conducive to that amazing degree of health displayed by the models in our shaving cream advertisements. On all but summer nights the tramp is cold, except when he's huddling next a jailor's furnace or stretching at gloomy ease between antiseptic Salvation Army sheets, with his clothes in the fumigator and his stomach crying for breakfast.

I was not a swaggering tramp. Main Street seldom saw me, for I went about in piecemeal clothing and seam-split shoes when unable to cadge these necessities from the several overbearingly charitable institutions.

The sociologist who tramps for a couple of months with a hundred dollars tucked away in a money belt might just as well have stayed at home. To feel the fangs of the road one must have one holey pair of overalls, no more; an appetite; and no place to go.

When the young sailor with whom I was travelling in British Columbia ran off with my scant possessions I knew my holiday had ended. Schoolboy notions of adventure, romance, etc., were submerged in the struggle for survival.

Followed days of aimlessness and adventures of a sort: running along the swaying catwalks of fast moving freight trains, and leaping from car to car; furtively opening the doors of empty refrigerator cars in the yards and later perilously swinging into them as the train hits fifty; occasionally being flung onto the grit beside a "highballing" train, inches from the pitiless steel disks; riding in the "blind baggages" of crack passengers, and choking in the everlasting tunnels; hearing the shriek of the novice whose foot was between the coupling pins when the train buckled; picking strawberries in Washington and cotton in Oklahoma for fifty cents a day minus board; struggling with several hundred cursing men on a San Francisco dock for two prized galley jobs—not a chance, of course. "Oh hell, I quit, from now on I'm a bum."

And then, after months without hope—a chance. A chance for fame and fortune? I'd had those ideas knocked out of my head completely. But a chance to live—cleanly and decently.

Thus far I've said nothing about the Civilian Conservation Corps, and what it has done for me. Yet I've said a great deal. It has taken me off the road, as it has thousands of others, and made us useful to our families, our country, and the future of our country.

The Civilian Conservation Corps has done more for the morale of the United States than a hundred loans to bankers. It has nipped in the bud scores of sprouting criminals and communist fire-eaters. It has transformed defeated men into breadwinners, the helpless into helpers. And this is good, for the road is a treacherous master and desperation has a dull conscience.

What new outlook has the Civilian Conservation Corps given me? It has given me a powerful faith in the government of the United States. It has led me to believe that henceforth the man who wants to work will be given a chance to do so, and that merit will be rewarded. All men may not be equal, but we do ask an opportunity to prove ourselves. President Roosevelt and his administration are giving us that chance.

The President, with his extensive recovery program has inaugurated a new era. By means of the Civilian Conservation Corps he is relieving thousands of people, young and old, from immediate distress, and preparing the youths physically and mentally for the future of which they are so much a part. Has the Civilian Conservation Corps increased my weight and hardened my muscle? It has done more than that. It has taken me off the road, and reawakened in me the ideals of Americanism, and proved to me that Americanism is a reality, not simply a word.

---

# 'I HAVE LIVED WITH NATURE--MAN'S FIRST FRIEND AND HIS LAST'

By Farran Zerbe II

Company 1321, Civilian Conservation Corps
CAMP S-132, CAMERON, PENNSYLVANIA

IT is well known that all of us have experiences which are of significant meaning at the time of their occurrence, but as life carries us into newer and often less vital experiences we tend to forget the lessons which the former have taught us and thus lose immeasurably thereby. Experiences cannot easily be renewed in the realm of action, but they can be reproduced in thought and contemplation, and in this way their essence is preserved for the future.

In just such a manner do I intend to preserve my experiences with the Civilian Conservation Corps, because I fully realize that the golden opportunity I now enjoy may never come again. I shall cherish these months in the world of nature not only as fond memories but also as valuable lessons learned on the battlefield of life.

Farran Zerbe II

How branded in the memory is that first day at training camp—the long, tiring, sleepless hours crammed with unforgettable incidents—that first terrible meal eaten out of a greasy mess kit—the nerve-racking physical examination—men passing out at the sight of a needle—myriads of mosquitoes feasting on fresh, tender bodies—everything new, different, and disconcerting! Then succeeding days of gradual acclimation to the regular precision of Army procedure—days of hard physical labor under a broiling sun that daily took its toll of fainting victims—days when the will to stick it out struggled with the urge to "go (*Continuing on page* 170)

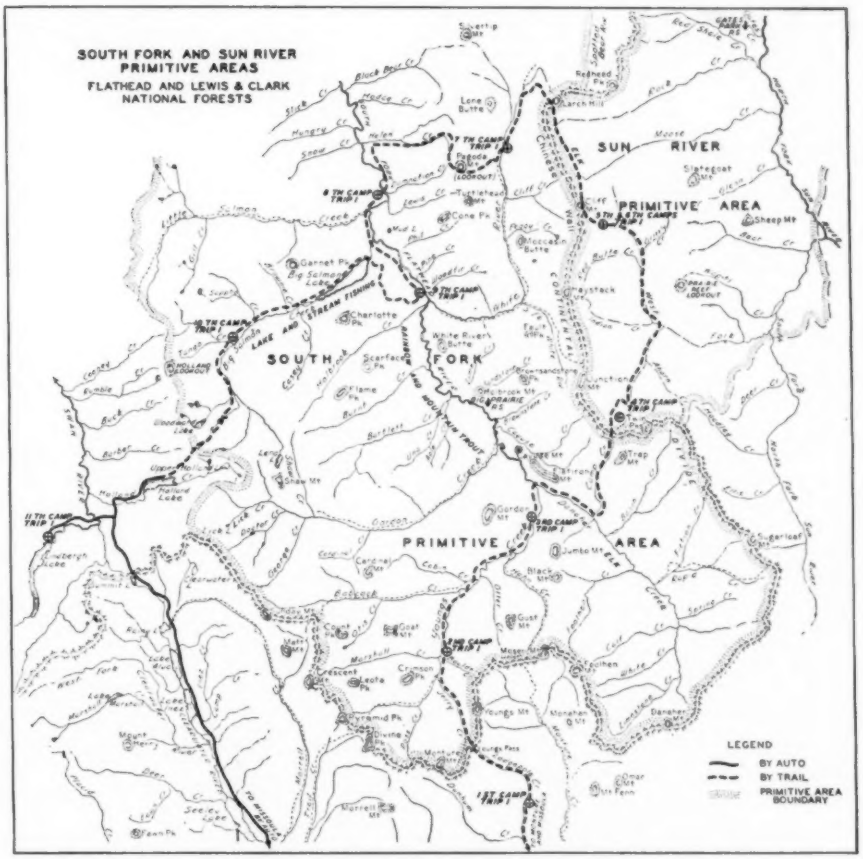
# RIDE! TRAIL RIDERS, RIDE!

## WILDERNESS TO BE EXPLORED BY THE TRAIL RIDERS OF THE NATIONAL FORESTS THIS SUMMER BECOMES "PRIMITIVE AREA" TO PROTECT NATION'S THIRD LARGEST ELK HERD

WHEN the Trail Riders of the National Forests drop down the east slope of the Continental Divide on July 12 and stake their camp in beautiful Pearl Basin, they will be in the heart of the nation's newest Primitive Area. They will be in the Sun River Wilderness of the Lewis and Clark National Forest, the land where the Blackfeet Indians held their picturesque sun dances, and which today is the home of the nation's third largest elk herd.

Officially designated as a Primitive Area on February 24, the Sun River Wilderness is a country without settlements, ranches, or roads. It is much the same today as it was when Sieur de la Verendrye planted the tricolor of France on its highest peak, the same as when Lewis and Clark viewed it for the first time in 1805, with the exception that where these intrepid explorers saw vast herds of buffalo, the Trail Riders today will look upon herds of elk.

For there are more than 5,000 elk in the 250,000 acres that comprise the Sun River Wilderness, and it is for their protection and for the perpetuation of the wild and rugged beauty of the country that the Forest Service has set it aside as a Primitive Area, to be administered and maintained in its natural state during the years to come.




**Map showing the route to be taken by the first 1934 party of The American Forestry Association's "Trail Riders of the National Forests," leaving Missoula, Montana, July 12.**

The party of Trail Riders who will enter this wilderness will leave Missoula on July 12, accompanied by naturalists and forest rangers. But before they reach this remote area they will penetrate part of the 625,000 acres of the great South Fork Wilderness of the Flathead National Forest, the country at the "back of beyond." It is a country of lofty glaciated mountains, dramatic in their boldness, a country a hundred miles from the sound of a locomotive and two days' journey by trail from the noise of an automobile horn. It is a land where bear, deer, elk and mountain goats live practically undisturbed by man.

But the Sun River Wilderness is vibrant with history, with tradition, with romance. It is the battleground of the Blackfeet and the Crows, whose blood mingled freely with the waters of the Sun in the days of their reign. The Trail Riders will cover part of the same trail that was feverishly traversed by gold seekers in the great Sun River stampede shortly after the Civil War when false word of a "strike" spread through the country. And somewhere in this rugged land there is treasure—ancient treasure, buried, so the story goes, by Henry Plummer, road agent, desperado and robber in the days when the Vigilantes rode for such as he.

And like the South Fork Wilderness, the Sun River country is colored by green forests, brilliant and rare flowers, dancing waters, canyons that sink out of sight, mountains that lose their peaks in the clouds. It is where the Trail Riders will find, and follow for fifteen miles, the famous Chinese Wall, a great granite ledge marking the "top of the continent."

Into this country the Trail Riders of the National Forests, sponsored by The American Forestry Association, will ride for eleven days, sleeping beneath the stars, answering that inherent urge for adventure and for physical exploration.

If you have not made reservations for one or both of the Trail Rider parties or if you desire additional information concerning them, write to The American Forestry Association, 1713 K Street, Northwest, Washington, D. C.

# Field and Forest for Boys and Girls

By John Harvey Furbay

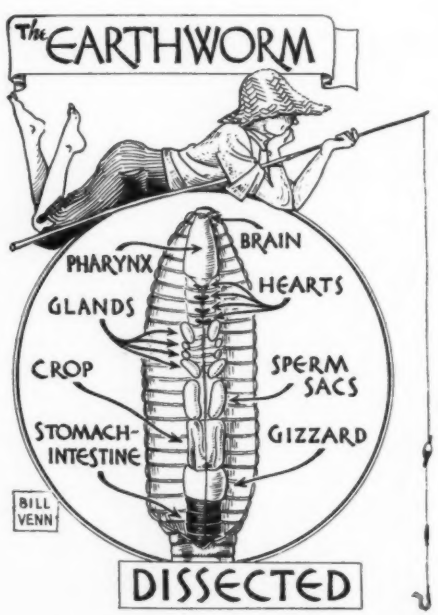
Illustrated by William D. Vennard

## ABOUT EARTHWORMS - -
## And Common Beliefs That Are False

EVERY boy who has gone fishing is acquainted with earthworms. He probably called them "fishing worms." Others call them "angleworms" or "night-crawlers."

These lowly animals have no distinct head, yet they have a "head-end" which is the end where the mouth is located, and is rounder than the tail-end. The body appears to be a series of rings fastened together, and each ring looks very much like the others. These are called "segments" or "somites," and there may be over a hundred of them.

Earthworms travel by alternately making their bodies long-and-thin, then short-and-fat. In order to keep from slipping, they are provided with four pairs of stiff bristles on each segment, on the under side next to the ground. These can be moved by little muscles, and they are a great help to earthworms in moving about. If they are cut off, the earthworm can not move across smooth places. If you will run your fingers along the under side of an earthworm, from back to front, you will feel these bristles very easily.




Earthworms are rarely seen crawling about in day-light. They remain under-ground or in damp places while the air outside is hot and dry, and then when evening comes, and the air becomes cool and moist again, they come to the surface and crawl outside. It is because of this habit that they have been called "night-crawlers." They will sometimes come out in the daytime if there is a warm rain. Because so many have been seen immediately after heavy rains, there have been many superstitions about earthworms "raining down." I have been told by several people that they were sure they had seen earthworms come down from the clouds along with rain in a heavy storm. Others tell of having seen them on their porch roofs after rains, and declare this is proof that they "rained down."

The facts are that their burrows fill up with water during a big rain, and unless they crawl out of them they will drown; so they usually crawl out and climb up on objects higher than the ground. They often crawl onto sidewalks and roads, and even onto higher structures. Earthworms found on porch-roofs have probably crawled out from cracks filled with dirt.

Each earthworm has five pairs of hearts, but this does not keep him from being "faint-hearted" when Mr. Cock-robin comes swooping down upon him, or when he faces the pointed tip of some fisherman's hook. He has no lungs, so he breathes through his skin as long as it is moist, and if it dries, he dies of suffocation.

The earthworm is a special friend of the farmer. He actually eats his way through the soil, although he has no teeth or jaws, and he fills the ground with thousands of little burrows which admit air and water. He carries the soil to the surface after he eats it, and many little piles of dirt can be seen around the little tunnels of these worms in any garden.

Darwin made a long study of these little helpers of the farmer and he estimated that in England one acre might contain over 50,000 earthworms, and that these could carry eighteen tons of fresh soil to the surface in one year. In this way, he said they would cover the earth with three inches of fresh soil every fifteen years.

Earthworms have no eyes, yet they know light from darkness, and will seek their burrows immediately if a flashlight is turned upon them at night. They have no ears, and probably cannot hear any sounds. They appear to have a sense of taste, and their sensitiveness to touch is very keen.

If earthworms are cut-in-two in the middle, the front part will grow a new tail, and continue to live; but the back part rarely ever grows a new head. If one is cut into three pieces, the middle piece may grow a tail at each end, and thus starve because it has no mouth. Various parts of different earthworms may be sewed together and all grow into a new worm. Thus several heads or tails may be produced on one animal. This is a common sport in my laboratory, and seems to cause the earthworms very little inconvenience.

Some people claim that earthworms produce music at night. This is too good a title for the rasping noise which they produce. Much argument has been given in attempting to explain these sounds. Some believe that the worms produce the sounds by rubbing their bristles together; others think it is by scraping their bristles over stones. At any rate, it is poor music, and they themselves can not hear it, for they have no ears.

In winter. earthworms are hard to find, unless one looks near the edge of some old manure pile, where, on account of the heat generated by the decaying matter, the ground does not freeze.

Every earthworm is both male and female. Their eggs are deposited in small cocoons secreted by the worm's body, and these eggs hatch into tiny earthworms. They will never become butterflies as do the cutworms; they will always be just what they are—for an earthworm once is an earthworm always.

Many people are afraid to touch a toad. They think that by some black magic it will cause warts to grow on their hands. I have handled many toads of various sizes and color, and I have never yet found any warts on my hands. On the other hand, I have friends who have never touched toads, but nevertheless have warts. Did you ever examine a toad? He has no warts. His skin is rough and wrinkled, but not covered with warts. He is cold, and many dislike to touch him because of this. Toads are absolutely harmless—just as frogs are—and they are valuable friends of the gardener, because of the great number of insects which they devour. One should never harm a toad—neither should he fear one.

Dragon Flies are called "Devil's darning needles," and are feared by children. What an unfair title for such a useful insect which innocently skims over the water, catching mosquitoes and flies. He may be held in your hand without harm, and fed flies. If you look in his mouth, you find no darning needle or thread, and decide that he has no way of "sewing up children's mouths," as many people have believed.

Porcupines are believed to be able to throw their sharp quills at their enemies. Stories are told about these deadly arrows being hurled at innocent victims. Yet we know that this is impossible. A porcupine cannot throw his quills any more than a chicken can throw its feathers. If the porcupine is attacked, he may rush at his enemy with his quills standing out in all directions over his body, and if the enemy leaps upon him, these quills may stick him badly, and pull out when the enemy tries to retreat. Thus a dog, after attacking its first porcupine, may come home howling, with several of these quills stuck into his hide—but the porcupine did not throw them.

Snakes are supposed to wait till sundown to die. This belief is held because snakes continue to squirm and wriggle from reflex action for some time after they have been killed. They may be killed instantly by crushing the head, and they do not continue to live till sundown. This same belief is often held, also, regarding turtles.

Stories of the "hoop snake" have been abundant for a long time. The facts indicate, however, that there is no such animal in existence. Some people have even stated that they have been chased by them, but no reputable man of science has ever yet found any traces of such a snake.

Another belief regarding snakes is that they often swallow their young and spew them out after the danger has passed. This, too, is an erroneous idea. Some reports have been made of young (*Continuing on page* 188)

# FAMOUS TREES EVERY BOY AND GIRL SHOULD KNOW

## No. 12---THE WESLEY OAK

THE WESLEY OAK, ON ST. SIMON'S ISLAND, OFF THE COAST OF GEORGIA, IS ANOTHER FAMOUS AMERICAN TREE—AMONG THE NOBLE OAKS OF THE COUNTRY THERE IS NOT ONE MORE BEAUTIFUL NOR MORE SYMMETRICAL IN ITS SPREAD OF BRANCHES

OUR NATION WAS VERY YOUNG WHEN THIS OAK, DESTINED TO BECOME FAMOUS, WAS USED AS A SANCTUARY BY JOHN WESLEY, A CLERGYMAN OF THE CHURCH OF ENGLAND, AND THE SON OF A CLERGYMAN, BUT WHO WAS PROTESTING AGAINST SOME OF THE USUAGES RIFE IN CHURCH QUARTERS AT THAT TIME—WHEN JOHN WESLEY AND HIS BROTHER CHARLES CAME TO AMERICA, THEY WERE STILL IN THE ANGELICAN CHURCH—BOTH JOHN AND CHARLES PREACHED UNDER THIS OAK TO THE BRITISH SOLDIERS WHO WERE QUARTERED ON ST. SIMONS ISLAND

JOHN WESLEY CAME FROM ENGLAND UPON THE INVITATION OF GOVERNOR OGELTHORPE OF GEORGIA—A METHODIST IN PRACTICE AND BELIEF, HE PREACHED HIS FIRST SERMON IN AMERICA IN 1736—IN 1737 HE RETURNED TO ENGLAND—THERE HE CONTINUED THE WORK WHICH HAS MADE HIS NAME FAMOUS

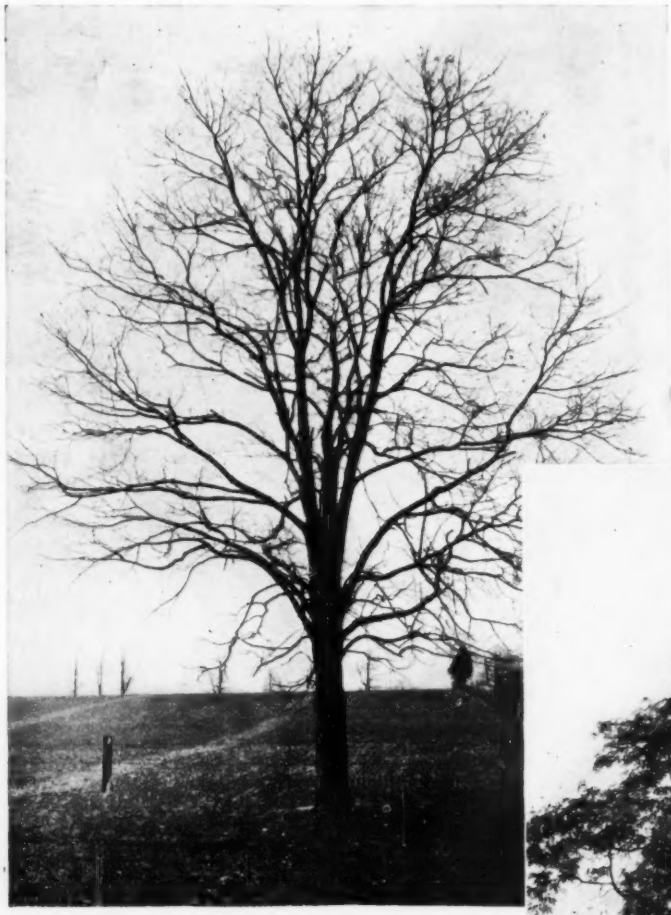
# BLACK LOCUST

## *Robinia Pseudoacacia,* Linnaeus

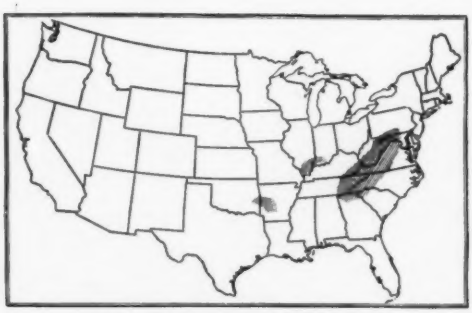
THE black locust, or false acacia, *Robinia Pseudoacacia,* sometimes called yellow locust, belongs to the pea or legume family, and has the quality of adding nitrogen to the soil. It was originally native to the Appalachian Mountains from Pennsylvania to Georgia, and to parts of Arkansas and Eastern Oklahoma, but has been successfully planted in every State. In its natural range black locust grows along streams, in mountain coves or on the borders of forests, and usually in mixture with other hardwood trees. In many parts of the country it has escaped from cultivation and so established itself as to be generally accepted as native. It prefers deep, sweet, well drained fertile loam and soils with a limestone origin having brown or reddish brown subsoils, but will grow almost anywhere except in soils which are either very sandy, wet, heavy or acid.

Trees may attain heights of forty to eighty feet and trunk diameters of two or four feet, but they seldom live over 100 years.

The open branching and frond-like leaves give the crown the appearance of a plume. The alternate and pinnately compound yellow green leaves are eight to fourteen inches long and composed of seven to nineteen rounded leaflets, each on a slender stalk. They develop in April or early May. During rainy days and on the approach of evening



**Black locust forks frequently and develops a rather uneven crown which gives a plume-like appearance to the tree when in full leaf, while the seeds flutter and rattle all winter.**



**Natural range of black locust.**

the leaflets fold and the entire leaf droops slightly, after the manner of the true acacias. By the end of September or occasionally early October the leaves turn a pale clear yellow before dropping.

The dark reddish-brown, rough, deeply fissured bark is an inch to an inch and a half thick and frequently twists diagonally across the trunk. Tonic, purgative and emetic qualities are reputed for the inner bark and roots of the trunk.

The twigs are pale green and silvery in the spring, turning reddish-brown in the summer and marked with scattered pale lenticles. They bear pairs of short woody spines or thorns like those of a rose.

The new leaves are scarcely formed when clusters of fragrant white pea-like blossoms appear over the entire tree. These are perfect flowers, having a pistil as well as stamens, and are filled with nectar which attracts bees and other insects. From these come thin, smooth, bean-like pods with four to eight little dark orange seeds which ripen during September and October but hang on the trees through the winter.

**The pinnately compound leaves are alternate on the twig, but each of the seven to nineteen oval leaflets, borne opposite one another, forms the full leaf.**

Black locust wood weighs about forty-eight pounds to the cubic foot when air dry, and is stronger and stiffer than white oak. Freshly cut wood is greenish yellow to dark brown, coarse grained and surrounded by creamy white sapwood.

Black locust is supreme for use as insulator pins which are inserted on the cross arms of telephone and power transmission lines. Approximately 18,000 cords of high quality timber are necessary to make the 25,000,000 pins which have been manufactured in a single year for this use. Smaller amounts go into the hubs of wagon wheels, for treenails to pin ship timbers together and for fence posts, mine timbers, poles and tool handles.

The available supply of black locust was estimated in 1926 to consist of 1,255,000 cords, of which the bulk is in Tennessee, Kentucky, West Virginia and Virginia. Few stands have as much as twenty cords to the acre, and large areas seldom average more than a cord to the acre.

It was introduced in Europe during the early part of the seventeenth century by Jean and Vespasien Robin, herbalists to the King of France, and bearing their name is now the most generally accepted American tree in Europe. Because of its wide spreading fibrous root system, its tendency to send up new shoots from the roots, and the ability which it has with most other leguminous plants to develop nitrogen-fixing nodules on its roots, black locust is unusually adapted to the reclamation of soils and control of erosion.

Serious injury and disfigurement frequently follow attacks by the locust borer, and in some parts of the East a leaf miner gives the foliage a ragged, burned appearance.

**Racemes of fragrant white pea-like flowers appear in May and June. (Below) Dry bean-like seed pods with four to eight seeds.**

**The deeply furrowed orange brown bark of the trunk is an inch or more thick.**

## Fire and Water!

(*Continued from page* 155)

quiet guidance of foremen who teach them how to use the tools of their pioneer forefathers, together with the modern machinery of construction.

All through the high mountain meadow country of the Sierra and Coast Range mountains last summer you could find crews of from fifteen to twenty men building dams in the eroded beds of streams. These are in series, one below the other, the distance apart depending on the steepness of the slope, the nature of the soil composition and the degree and extent of the erosion. These dams are not for the purpose of storing water but are designed to check the rushing flow of the streams during the spring flood season and to form catchment basins where eroded particles of earth will be deposited and held. In time this action will fill the washes and partially, if not wholly, restore the former fertility to the meadows.

In other parts of the mountains the "brush marines" would be building firebreaks, wide lines cleared of all plant growth, for the main purpose of providing avenues of ingress and egress for fire fighters, also a vantage ground from which to fight the flames. Under some conditions these lines will act as a barrier against the spread of the blaze. They are constructed on the summits of ridges, especially in southern California, where they have been part of the protection development work for over twenty-five years. In other localities they follow the base of the hill country to form a defense for the mountain watersheds against lowland fires. In the northern part of the State thousands of C.C.C. boys have been at work during the winter on what is known as the "Ponderosa Way"—an 800-mile firebreak separating the commercial timbered belt of the Sierra Nevada and Coast Range mountains from the grass and woodlands country of the Sacramento and San Joaquin Valleys.

Another type of firebreaks are the "truck trails," which are nine-foot roads for the motor transportation of fire fighters into parts of the mountains that are dangerous on account of fire and inaccessible now except by trail. These are similar to other low cost roads but are not open to public travel. Their main purpose is the rapid concentration of fire fighters and supplies in hazardous fire areas. Like firebreaks, they also serve as a line from which to attack as well as a narrow firebreak.

Last summer in the National Forests of California between the middle of June and the end of the first enrolment in October, the C.C.C. built 850 miles of truck trails, 212 miles of firebreak and 750 erosion control dams. They did many other things, a few of which were to build 593 miles of telephone line, remove the dead and inflammable material from 976 miles of road and trail and from 61,000 acres; they fought the pine beetle depredations on 64,000 acres and the white pine blister rust on 20,000 acres. They poisoned range-destroying rodents on 439,000 acres.

It is estimated that in the time between the establishment of the camps and the end of the first enrollment period in Ocober, 1933, the C.C.C. accomplished in four months as much work in the National Forests of California as is usually done in three years, and that if the Corps is continued another year the program will be advanced by approximately ten years. President Roosevelt mobilized them "to do necessary and useful work," and they are doing it in a way that is a credit to the nation. They are rehabilitating not only themselves as citizens but the forests, fields and waters.

## What the C.C.C. Has Done for Me

(*Continued from page* 164)

over the hill" and won often by the narrowest of margins.

Then the sudden call to the forests. I was more than glad to quit that stifling, mosquito-infested area to go to the cool timberlands of Pennsylvania. Although hungry and tired after my long train ride to camp, my ardor was undiminished. I was at last living in God's own world, still undefiled by the artificiality of a man-made civilization. I felt my lungs thrill to a fresher, purer air than they had ever known. My whole being tinged with expectancy at the prospect of communing with a nature I knew only through books. Hard work and hardships were before me, but what did I care so long as they were stepping stones to manhood.

And in none of these expectations have I been disappointed. I have gone to sleep under rain-soaked blankets, and have risen to see the dawning sun caress the mountains with its loveliness. I have felt the weariness that follows days of cutting through dense brush and carrying stones and timber, but I have also looked aloft at night and felt the deathless beauty of the stars. I have spent Sundays climbing mountains that I would never have ventured a year ago, and have beheld vistas that the slaves of pavements never see.

In short, whatever I was when I enrolled in the Civilian Conservation Corps, I am nearer to being a man than ever before. I now know what the Greeks meant by "a healthy mind in a healthy body." I am keener, more awake and alive than ever before. I have tried to vision the entire scope of President Roosevelt's great project for reforestation. The possibilities are enormous, and the accomplishments thus far have not been unworthy of those possibilities.

What have we done from a purely material standpoint? We have planted trees where there were none. We have cut away underbrush, thus allowing young trees to grow to maturity. We have improved old roads and built new ones, not only that the forests might be made more accessible to fire-fighting parties, but also that those who live in cities and towns and look out all day on nothing but buildings and paved streets could better spend their leisure hours in the quiet, peaceful woods far away from the nervous haste of the complex business world of today. Moreover, men have been given work when it was not available elsewhere, thereby lessening the strain on relief boards.

But, finally, what has all this meant to me? Much—much more than I can express. I have learned to work with my hands as well as with my mind. I have attained a physical vigor unknown before. I have aided in a project that posterity will praise and benefit by. Above all I have learned that life is a continuous struggle, "a stuff to try the soul's strength on," and that the world pays dividends only to the worker. I have also learned that human nature varies not in kind but only in degree, that man is essentially the same wherever you find him. Lastly, and perhaps most important of all to me is the fact that I have lived with nature, and have an appreciation of her beauties that no book can ever give. She has become my friend and my friend she shall be always, perhaps after all, the only friend who is constant and true, who never chides me for my faults, who gives all and asks nothing, changless, man's first friend and his last.

This is the McCormick-Deering T-40 TracTracTor—a 6-cylinder, 5-speed crawler-type tractor—operating a trailbuilder.
TracTracTors are the most accessible crawler tractors ever built.

# Put This Economical Power to Work

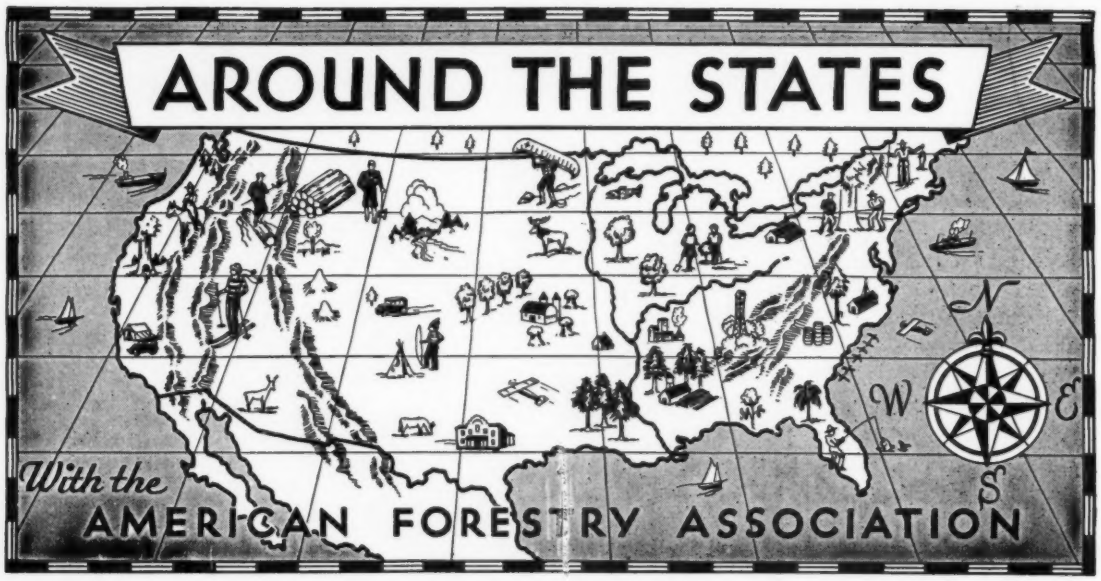
WHEREVER there is a need for mobile industrial power, McCormick-Deering Industrial Tractors are designed to meet it. They provide low-cost power for the construction and maintenance of roads, and in factory, railroad, lumber, mill, mine, and quarry service. They are available in wheel and crawler types; and there are three sizes of power units for stationary power needs.

POWERFUL T-40 6-CYLINDER

Ask the nearest Company-owned branch, or McCormick-Deering distributor or dealer, for a demonstration. You will find plenty of power at your instant command, and you will see how ruggedly these tractors and power units are built to withstand the shocks and strains of the toughest kind of work. They can be used as individual units or combined with soundly engineered equipment, offering a wide range of utility. Write us for catalogs.

INTERNATIONAL HARVESTER COMPANY
606 So. Michigan Ave. *of* America (*Incorporated*) Chicago, Illinois

# McCORMICK-DEERING INDUSTRIAL POWER




## Darling is New Chief of Biological Survey

Jay N. Darling, famous newspaper cartoonist widely known as "Ding," has been named as Chief of the Biological Survey, Department of Agriculture, to succeed Paul G. Redington who resigned on March 1. Announcement to this effect was made by Secretary Wallace on March 10. Mr. Darling assumed his new duties March 15, saying that he will continue to draw cartoons as time permits.

Commenting on the appointment, Secretary Wallace said, "Mr. Darling will be warmly welcomed by all of us here in the Department. He will make a real contribution and I personally look forward with pleasure to our official association." The Secretary added that at no previous time in the history of the country has there been such widespread sentiment for the preservation of the nation's wildlife resources.

Long interested in conservation, Mr. Darling has, in recent years, been a leader in the field of wildlife restoration. His interest has often been expressed through his cartoons. A few months ago he was awarded the Medal of the *Outdoor Life Magazine* for outstanding service in the field of wildlife restoration. He is a member of the President's Committee on Wildlife Restoration which submitted its report to the President on February 8, a member of the Migratory Bird Conservation Commission of the Department of Agriculture, a Vice-President of The American Forestry Association, and a National Director of the Izaak Walton League of America. He is also a member of the Iowa Fish and Game Commission and of the Iowa Planning Commission.

Born in Norwood, Michigan, October 21, 1876, Mr. Darling has made his home in Iowa for the past thirty years. Entering newspaper work as a reporter in 1899, he began his work as a cartoonist a year later for the Sioux City *Journal*. From 1911 to 1913 he was cartoonist for the New York *Globe; from* 1913 to 1917 for the Des Moines *Register*, and since then for the New York *Tribune* also. His cartoons have become world famous.

Mr. Darling has long known Secretary of Agriculture Henry A. Wallace. Appointed a member of the President's Committee on Wildlife Restoration on January 6, he has spent most of his time since that date in Washington assisting in the preparation of the committee's report. His work on the committee has enabled him further to acquaint himself with the field of activities and purposes of the Biological Survey. His appointment as Chief of the Survey is gratifying assurance to friends of wildlife that the Survey is not to be broken down, as some have feared.

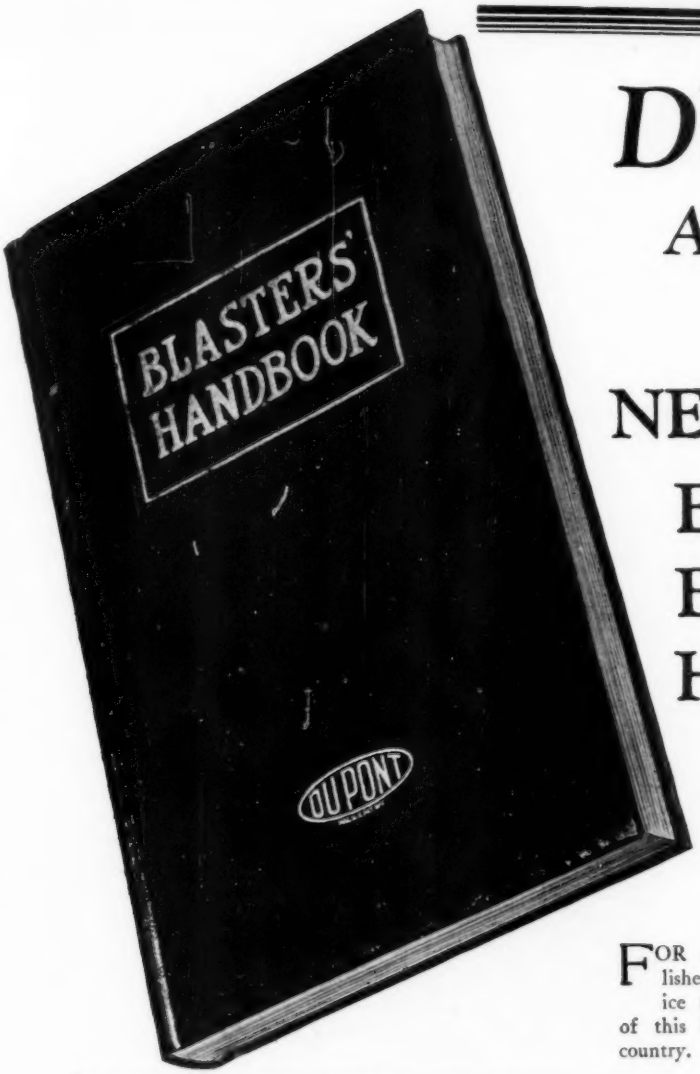
Jay N. Darling — Courtesy The American Magazine

## President Endorses Control of Public Domain

The Taylor Grazing bill, H. R. 6462, to stop injury to the Public Domain by preventing over-grazing and soil erosion was favorably reported to the House by the Public Lands Committee on March 9, and promised early action in that body. Two events, following closely upon one another, were probably responsible for this action. A letter from President Roosevelt to Secretary Ickes of the Department of the Interior dated February 21 was submitted by the Secretary to the Committee on Public Lands on the twenty-third, in support of the measure. The President said: "I have discussed with you and the Secretary of Agriculture, Congressman Taylor's bill, H. R. 6462, to give the Secretary of the Interior the power to regulate grazing on the Public Domain. I favor the principle of this bill and you and the Secretary of Agriculture are authorized to say so to the House Committee on Public Lands."

Three days later, Senator Hayden of Arizona introduced in the Senate an amendment to the Taylor bill to await its arrival in that House. This would place all regulation of grazing on public lands directly under the Forest Service, and was supported by Senators McNary of Oregon, Dill of Washington, Bulow of South Dakota, Pope of Idaho, Hatch of New Mexico, Bone of Washington, Ashurst of Arizona and Thomas of Utah.

As reported to the House the bill is amended to require twenty-five per cent of gross receipts from rental of the lands from grazing to be used for range improvements and seventy-five per cent to be given the counties in which the grazing units may be located.




# DU PONT ANNOUNCES A NEW AND REVISED EDITION OF BLASTERS' HANDBOOK

*THE ONLY BOOK OF ITS KIND PRINTED*

FOR fifteen years, the Blasters' Handbook, published by du Pont, has proved of invaluable service to users of explosives. Thousands of copies of this book have been distributed throughout the country.

As new explosives were introduced, and improved methods of using explosives developed, the Blasters' Handbook has been revised and enlarged. Now—in 1934—comes the EIGHTH EDITION,—an authentic, 265-page book including over 300 different subjects.

Practically every phase of using explosives is described in this new edition of the Blasters' Handbook. It is profusely illustrated with diagrams, and also contains supplementary data of service to engineers and others engaged in work in which explosives are essential.

*Among the principal topics described in detail in the NEW Handbook are:*

TYPES OF EXPLOSIVES AND THEIR CHARACTERISTICS
PRACTICAL METHODS FOR USING EXPLOSIVES
STORAGE AND TRANSPORTATION
SELECTION OF EXPLOSIVES
PRECAUTIONS TO BE OBSERVED BY USERS OF EXPLOSIVES

With this EIGHTH EDITION of the BLASTERS' HANDBOOK in your reference file, you will have a practical, dependable and authentic source of information for guidance when required to prescribe the application of explosives to any project in which their employment is essential. An investment of ONE DOLLAR will obtain the newest and most valuable BLASTERS' HANDBOOK. *Send your remittance and address NOW.*

E. I. DU PONT DE NEMOURS & COMPANY, INC.
ADVERTISING DEPARTMENT
*6100 Du Pont Building* *Wilmington, Delaware*

DU PONT
REG. U.S. PAT. OFF.

*Give* **YOUR** *boy or girl the advantage of a*

**NEW ENGLAND CAMP**

No wonder the first boys' and girls' camps were located in New England! Its great natural beauty, its long experience with boys and girls, combine to make New England first choice. Consider these advantages.

**SCENIC BEAUTY**—Mountains, lakes, wooded trails, seashore—all within the compass of a few miles.

**SAFETY**—Sheltered bays and lakes. Long experience with boys and girls. Your mind will be free from worry, if your son or daughter is in a New England camp.

**HISTORIC INTEREST**—Under experienced educators, your children will absorb history where the history of our country began—in New England.

**A HEALTHY, COOL CLIMATE**—Your children will come home tan, strong, and self-reliant—ready more than ever for the school year.

**FREE SERVICE**—The New England Council has prepared a booklet of selected New England camps. Send for it. You owe it to your children to make the best selection. This booklet will help you do so.

NEW ENGLAND COUNCIL
Statler Building
Boston, Mass.

Please send me free copy of Camp Guide and New England vacation booklet AF-14

Name .....

Address .....

.....

# FOREST PROGRAM MOVES FORWARD

Characterized by President Roosevelt as one of the most important things that has been done in Washington during the past winter, the forest program formulated through a series of conferences held pursuant to the Lumber Code now awaits only the formal approval of the President to become a public policy of the Government. On February 23, President Roosevelt received a group representing both the lumber industry and public conservation agencies for the purpose of reviewing the program in so far as it relates to conservation practice to be undertaken by the industry. Time did not permit him to discuss the public program or the legislation and governmental commitments which it involves. Secretary of Agriculture Wallace, however, has given his approval to the public action proposed and it is expected that this part of the forest restoration program will have the President's consideration later in March.

At the conference with the President, John D. Tennant, Chairman of the Lumber Code Authority and Wilson Compton, Manager of the National Lumber Manufacturers Association, briefly summarized the industry program of woods practice designed to place the industry upon a sustained yield or forest perpetuation basis. William G. Howard, State Forester of New York, speaking for the Association of State Foresters, expressed to the President the approval of his association of both the industry and public phases of the program. The President listened to the statements with close attention and upon their completion expressed the belief that by virtue of the action inaugurated industrial forestry is on its way to be realized. Progress, he said, will necessarily be slow, and it may perhaps be another twenty years before the kind of forestry desired is achieved by private operators. He concluded the conference with the statement that in his opinion the forest conservation code is about the most important thing that has been accomplished in Washington this winter. In addition to Mr. Tennant and Mr. Compton, industry representatives of the conference included: B. W. Lakin and C. R. Johnson, California, G. F. Jewett, Idaho, P. V. Eames, Minnesota, A. Trieschman, Illinois, W. R. Ritter, Ohio, E. R. Plunkett, New York, C. S. Chapman, Washington, Carl Bahr, District of Columbia, William L. Hall, Arkansas, H. W. Cole, California, Gustavus Kirby, New York, Frank Wisner, Mississippi. Public representatives included: F. A. Silcox, E. H. Clapp, and B. P. Kirkland of the Forest Service, William G. Howard, Association of State Foresters, Ovid Butler and Joseph Hyde Pratt, The American Forestry Association, P. S. Ridsdale, American Tree Association and S. S. McCloskey, National Grange.

The industry program, already approved by the Lumber Code Authority is awaiting final approval of the National Recovery Administrator. This program calls for inauguration of woods practices and fire protection that will assure the continuous growth of forests on privately owned lands. Approving action on the part of the NRA is expected this month as the result of a hearing held on February 26 on proposed supplements to the code incorporating the conservation practices and procedure recommended for industry by the Conference. The program therefore is now a part of the Lumber Code, which as amended requires each Division and Subdivision of the lumber industry to submit on or before April 15 rules of forest practice applicable to their regions. After approval by the Code Authority, these rules become obligatory June 1, 1934, for all operators subject to the code jurisdiction of the respective division.

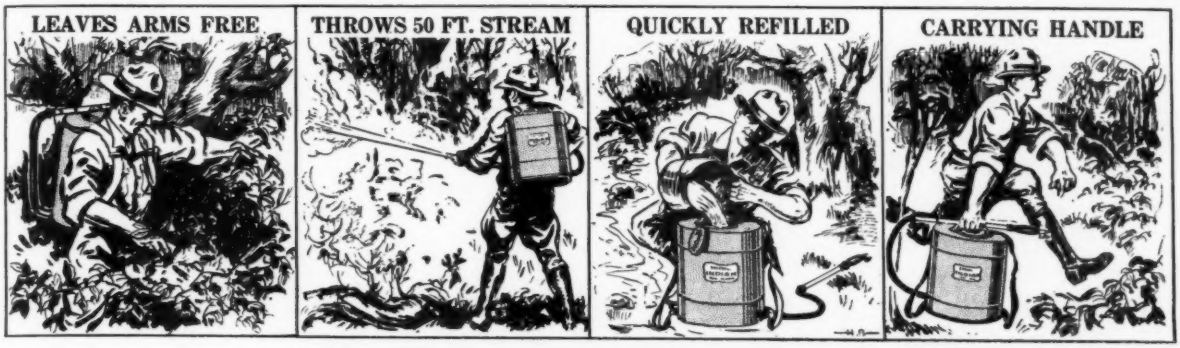
On March 12, action was initiated to bring under this conservation code virtually all operators on forest land who cut forest products for sale, including farm woodland owners, pulpwood operators and makers of hewn ties. On that date a hearing was held in Washington by the National Recovery Administration for consideration of an amendment to the lumber code, proposed by President Roosevelt, that would broaden the jurisdiction of the code to include in addition to lumber, "hewn ties, pulpwood, acid wood, mine props, cordwood and cooperage staves, which are cut for sale or sold." If this amendment is approved—and the fact that it has been proposed by the President himself indicated that it probably will be—the conservation program will apply to practically all privately owned forest lands in the country aggregating some 400,000,000 acres.

Although the industry program has got off to a flying start, the public program has moved more slowly in point of receiving final approval. It was hoped that formal Presidential approval would be received early in March and that bills incorporating the necessary legislation to effectuate the public program would be immediately presented to Congress with the President's backing. A delay in obtaining the President's detailed consideration of this part of the program, however, was encountered, due to the fact that both Assistant Secretary Tugwell and Chief Forester Silcox, who were to confer with the President, received an emergency call to go to Puerto Rico and did not expect to return until about the middle of March. At this writing it had not been decided whether the conference with the President would be held by other representatives of the Department or the matter allowed to await the return of Mr. Tugwell and Mr. Silcox.

The public recommendations awaiting the formal approval of the President include bills for introduction in Congress that will when passed make possible the carrying out of the public program which forms a part of the mammoth conservation enterprise. Most of the legislative features have been incorporated in one bill, the essential features of which are summarized below:

(1) Amendment of the Act of June 7, 1924, commonly known as the Clarke-McNary Act, to broaden the authority of the Secretary of Agriculture, to cooperate with states, individuals and suitable agencies in forest and soil protection including fire, forest insects, tree diseases, soil erosion and floods; to study the effects of tax laws and to aid in devising methods of forest taxation designed to encourage the growing of timber. For these activities an increase of appropriations is provided of not to exceed $10,000,000 annually for fire prevention, $500,000 annually for combating forest insects and diseases and $5,000,000 annually for prevention of soil erosion and flood control work. Amendments would further broaden the Government's cooperative work in the production and distribution of tree seeds and plants by increasing the appropriation to $350,000 annually, of which $100,000 would be for planting forest land on farms.

Provision is also made in the bill for ap-




**Truck Carrying Rack**

Carrying rack of unbreakable malleable iron which bolts to running board or floor of truck makes outfit complete. Straps hold pump in place. Heavy, black japanned buckle instantly locked or unfastened.

# IT'S EASY TO SEE WHY So Many Foresters Always Specify INDIAN Forest Fire PUMPS!

When men whose business is fighting fires indicate a preference for INDIAN FIRE PUMPS they must have qualities which make them outstanding. Freedom of arms for going through brush and thickets is extremely important in forest fire fighting. Equally necessary is it that a pump throw a good strong stream. The INDIAN sends a powerful stream over 50 ft.

The new ventilated tank is a feature readily appreciated. It keeps the back of operator warm and dry thus preventing sickness, colds and discomfort. The free circulation of air between the tank and wearer's back shuts out the cold dampness of the water temperature. Tank is positively water-tight to prevent leakage.

These and many other reasons explained in booklet we would like to send you account for INDIAN FIRE PUMPS' wide popularity.

COMBINATION BRASS NOZZLE FOR 50 FOOT STREAM OR LONG COARSE SPRAY
PATENTED
HEAVY CAST BRASS, QUICK OPENING WATER TIGHT FILLER CAP WITH REMOVABLE BRASS STRAINER. CAP HAS INSIDE CHAIN TO PREVENT LOSING.
USES ONLY Clear WATER
COMBINATION BRASS HANDLE FOR CARRYING TANK AND FOR HOLDING PUMP
EXTRA HEAVY TANK HAS SOLID BRASS BOTTOM. ALL JOINTS LOCKED AND SOLDERED. BUILT STRONG.
INDIAN

Strong construction and careful workmanship insure an INDIAN FIRE PUMP always being ready for use. THEY NEVER FAIL TO WORK!

The vital necessity for conservation of our forest lands is more apparent now than ever before. Be prepared! The slight cost of an INDIAN is many times made up for in the protection it affords.

**We Have Supplied Thousands of INDIAN FIRE PUMPS for Use in Government C.C.C. Camps**

FORM-FITTING, VENTILATED TANK GIVES A CONSTANT CIRCULATION OF AIR BETWEEN TANK AND CARRIER'S BACK. IT PROTECTS THE BACK FROM THE COLD WATER AND MOISTURE IN THE TANK AND KEEPS THE BACK WARM AND DRY. THE FORM-FITTING SHAPE OF THIS TANK FITS THE BACK PERFECTLY, SNUG AND FIRM AND FEELS GOOD.

Sturdy construction throughout, with tank bottom of heavy solid brass which cannot corrode or rust, makes the INDIAN equipment which lasts indefinitely without attention or repair.

*Manufactured by*
**D. B. SMITH & CO. UTICA, N. Y.**

*Pacific Coast Agents:* **HERCULES EQUIPMENT AND RUBBER CO., 11 Mission St., San Francisco, Cal.**

*Mail Coupon TODAY!*

D. B. Smith & Co.,
405 Main St., Utica, N. Y.

Gentlemen: We want to know more about your line of Fire Pumps. Please send information and prices.

Name_____
Address_____
City_____
State_____

-EAST-
MICHIGAN

**Here is the peace of woods and waters**

**IN ITS wildernesses of woods and waters, its deep forests of pine and birch, its gorgeous Huron Shoreline and its inland lakes and rivers—East Michigan offers rest to tired city nerves. And throughout its entire length, its wildest paths are within easy distance of modern hotels and camps and cottages! Follow them this summer!**

Send Stamp for Information and State Map, Showing Lakes, Streams, State Forests, and Highways.

**LOG OFFICE, Box 57**
**Bay City, Michigan**

MISSOULA
The Garden City

**In the heart of the Fishing, Hunting, Recreation and Scenic Empire of Western Montana.**

**Center of five fertile agricultural valleys.**

**700 miles of trout fishing waters within a radius of twenty-five miles of the city.**

**Dude ranches, U. S. Bison Range and primitive forests within a few miles of the city.**

**Location of State University, U. S. Forest Service, Fort Missoula and the largest sawmill in Montana.**

**Splendid opportunities for homes, farms and business locations, as well as for the recreational advantages.**

***For illustrated booklets and reliable information write***

***Missoula Chamber of Commerce, Missoula, Montana.***


propriations of not more than $250,000 for farm woodlands and $350,000 for other forest lands to enable the Secretary of Agriculture to match on a dollar for dollar basis forest extension contributions of the states; to give technical advice to owners in growing useful timber crops on their lands; to give the Secretary of Agriculture broader authority in accepting forest lands donated to the Government by empowering him to pay the accumulated taxes on such lands, which upon acceptance by the Government would become National Forest properties; to authorize the President to add to existing National Forests public lands chiefly valuable for watershed protection or timber production, provided such lands are recommended by the National Forest Reservation Commission; and to authorize the Secretary of Agriculture to establish and maintain a seed testing and certification service for forest tree seeds and forest planting stock with an annual appropriation of not more than $50,000.

(2) Amendment of the Act approved May 22, 1928, commonly known as the McNary-McSweeney Act, to provide increased funds not exceeding $500,000 annually to accelerate completion of the forest survey. The total appropriations that would be available for this work would not exceed $3,000,000, but in addition to the foregoing items an appropriation of $200,000 annually to keep survey data up-to-date is provided. An expansion of forest research work is further authorized in the field of social and economic investigations by an appropriation of not more than $500,000 annually. An appropriation in a similar amount is provided to make possible expanded research work to determine the highest service of forest and plant growth in the regulation of stream flow, control of erosion, the maintenance of soil productivity and the effect of forests upon climate and rainfall.

Section 13 of the bill gives the Secretary of Agriculture authority "to determine and establish sustained yield units wholly or partly within National Forests for the purpose of establishing communities and industries by assuring the availability of a sustained yield of timber from National Forest lands and lands in other ownerships." Section 14 of the bill would amend the act approved March 20, 1922, known as the Forest Land Exchange Act, to make land exchanges irrespective of National Forest and state lines.

The final section of the Act is designed to make possible the large program of forest land acquisition which contemplates the ultimate purchase of some 135,000,000 acres for National Forest purposes. To this end it amends the Act of March 1, 1911, known as the Weeks Act, to authorize an annual appropriation of not more than $50,000,000. Authority to finance this huge program is given the Secretary of the Treasury "with the approval of the President" by borrowing on the credit of the United States with the issuance of bonds in the amounts required.

Two other bills are in course of preparation. One provides for a governmental agency making available to the states and private forest owners a permanent source of forest credits; the other would effectuate the recommendations of the Forestry Conference in respect to the revested Oregon and California railroad grant lands in Oregon. These lands contain about forty billion feet of timber and the Conference recommended that they be transferred to the Forest Service and thus brought under sustained yield forest management as National Forests.

## PRESIDENT TO TRY DIRECT ADMINISTRATION OF PUBLIC LANDS

By an executive order issued by the President on February 6, approximately 1,200,000 acres of public lands in Utah lying south of the "Great Salt Lake Desert" have been withdrawn from public entry. The purpose of the order is said to be to test the authority of the President to bring areas of the Public Domain under administrative rules and regulations designed to protect and perpetuate their resources without awaiting specific authorizing legislation. It is contemplated that administration of the lands in question will be comparable to that established for the Mizpa-Pumpkin Creek area in Montana and the Owens Valley area in California where regulated grazing by the Interior Department has been in effect for a number of years. The latter projects, however, were specifically authorized by acts of Congress.

The President's authority to withdraw public lands for administrative purposes was challenged by Senator King of Utah, who, on February 19th, introduced a Senate Resolution No. 194, declaring it to be the sense of the Senate that the practice of executive withdrawals of public lands "even though there has been no statutory disaffirmance by the Congress, shall not be considered to have been done with the implied acquiescence and consent of the Congress." The resolution further points out that while the Supreme Court of the United States has upheld the authority of the President to withdraw public lands "in aid of legislation" but without special authorization from Congress, the soundness of the decision is open to question in that the Constitution of the United States gives to the Congress power to dispose of and make all needful rules and regulations respecting the public lands." Senator King's resolution was referred to the Senate Committee on Public Lands for action.

Speaking on the resolution, Senator King said: "Large areas of the public domain have been and are being withdrawn from entry. **** It is claimed by some persons in the executive branch of the government that authority exists to not only withdraw from entry public lands, but also that such withdrawal confers authority upon the Interior Department to lease such lands, or subject them to such regulations as may be determined upon."

The President's executive order provides that the lands withdrawn are "to be reserved for classification, in aid of legislation, for conservation and development of natural resources and for use as grazing lands in accordance with such rules and regulations as may be prescribed by the Secretary of the Interior." The pending legislation referred to is undoubtedly the Taylor bill and other measures now awaiting the action of Congress whose purposes are to provide legislative authority for Public Domain administration.

# *Kelsey's Special Offer for*

# QUANTITY EVERGREENS

THE following stock is all nursery grown, several times transplanted and bushy. It will be shipped with a ball and burlap at these prices. The material is in surplus and this offer is designed to clear the ground. This is an unprecedented opportunity. All Eastern grown, 25 may be ordered at the 100 rate given. All prices net, trucking or transportation will be undertaken, however, at actual cost. **Not less than 25 of one kind can be ordered at these prices.**

### ARBORVITAE (Thuja)

| | (Each) |
|---|---|
| **American** | |
| 4 to 5 feet | $1.00 |
| 5 to 6 feet | 1.50 |
| **Pyramidal** | |
| 3 to 4 feet | 1.20 |
| 4 to 5 feet | 1.50 |
| 5 to 6 feet | 2.50 |
| 6 to 7 feet | 3.50 |
| **Oriental (Pyramidalis)** | |
| 3 to 4 feet | .70 |
| 4 to 5 feet | .90 |
| 5 to 6 feet | 1.50 |

### FIRS (Abies)

| | |
|---|---|
| **Balsam** | |
| 3 to 4 feet | $1.50 |
| 4 to 5 feet | 2.30 |
| 5 to 6 feet | 2.80 |
| 6 to 7 feet | 4.50 |
| **Concolor** | |
| 2 to 3 feet | 1.00 |
| 3 to 4 feet | 2.00 |
| 4 to 5 feet | 5.00 |
| **Douglas** | |
| 3 to 4 feet | .80 |
| 4 to 5 feet | 1.20 |
| 5 to 6 feet | 1.60 |
| 6 to 7 feet | 3.50 |
| 7 to 8 feet | 4.50 |
| **Nikko** | |
| 2½ to 3 feet | 1.50 |
| **Veitch** | |
| 2½ to 3 feet | 1.50 |

### CRYPTOMERIA

| | |
|---|---|
| **Japonica Lobbi** | |
| 3 to 4 feet | $1.50 |
| 4 to 5 feet | 2.00 |
| 5 to 6 feet | 3.00 |
| 6 to 7 feet | 4.00 |

### HEMLOCK (Tsuga)

| | (Each) |
|---|---|
| **American** | |
| 2½ to 3 feet | $ .70 |
| 4 to 5 feet | 3.50 |
| 5 to 6 feet | 5.00 |

### JAPAN CYPRESS (Retinospora)

| | |
|---|---|
| **Obtusa (Hinoki)** | |
| 3 to 4 feet | $1.00 |
| 4 to 5 feet | 1.50 |
| **Plumosa (Green or Golden varieties)** | |
| 3 to 4 feet | 1.75 |
| 4 to 5 feet | 2.50 |
| 5 to 6 feet | 3.00 |
| **Pisifera (Sawara)** | |
| (Green or Golden Varieties) | |
| 3 to 4 feet | 1.75 |
| 4 to 5 feet | 2.50 |
| 5 to 6 feet | 3.00 |

### PINES (Pinus)

| | |
|---|---|
| **Austrian (IV)** | |
| 4 to 5 feet | $2.00 |
| 5 to 6 feet | 4.00 |
| **Scots (II)** | |
| 3 to 4 feet | 1.00 |
| 4 to 5 feet | 1.50 |
| 5 to 6 feet | 2.00 |
| 6 to 7 feet | 3.00 |
| **Norway Red (I)** | |
| 3 to 4 feet (car-lot at $.30 each) | 1.30 |
| 4 to 5 feet | 1.80 |
| 5 to 6 feet | 2.50 |
| 6 to 7 feet | 3.50 |

| | (Each) |
|---|---|
| **Mugho Dwarf (II)** | |
| 1¼ to 1½ feet | $ .50 |
| 1½ to 2 feet | 1.00 |
| 4 foot specimens | 5.50 |

### WHITE (N. Y. State and New England Only)

| | |
|---|---|
| 4 to 5 feet | $1.50 |
| 5 to 6 feet | 2.00 |
| 6 to 8 feet | 2.50 |
| 8 to 10 feet | 6.00 |

### JAPANESE RED PINE

| | |
|---|---|
| 4 to 5 feet | $2.50 |
| 5 to 6 feet | 3.00 |
| 6 to 7 feet | 4.00 |

### SPRUCE (Picea)

| | |
|---|---|
| **White** | |
| 3 to 4 feet | $1.50 |
| 4 to 5 feet | 2.00 |
| 5 to 6 feet | 4.00 |
| 6 to 7 feet | 4.50 |
| **Norway** | |
| 3 to 4 feet | 1.50 |
| 4 to 5 feet | 2.00 |
| 5 to 6 feet | 4.00 |
| 6 to 7 feet | 5.00 |

**SPECIAL CAR-LOT OFFER**
**One thousand in a car—Red Pine or Norway Spruce—or mixed.**
**3 to 4 feet B and B, $300.00 per 1,000**

| | |
|---|---|
| **Colorado (Green)** | |
| 3 to 4 feet | 3.50 |
| 4 to 5 feet | 5.00 |
| **Yew (Taxus)** | |
| Cuspidata tree form sheared, B. & B. 15 to 18 three (heavy) | $90.00 |

## Smaller Sizes for Large Plantings

**Shipped with roots packed in damp moss, making a safe, light, inexpensive shipment.**

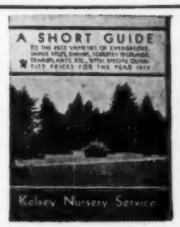
| | (inches) | (transplanted) | (100) | (1000) |
|---|---|---|---|---|
| **PINES (Pinus)** | | | | |
| Red (resinosa) | 24 to 36 | twice (good) | $15.00 | $100.00 |
| Austrian | 12 to 18 | twice (good) | 10.00 | 80.00 |
| Austrian | 18 to 24 | twice (bushy) | 13.50 | 100.00 |
| Scotch | 30 to 36 | once (light) | 6.00 | 36.00 |
| Scotch | 34 to 36 | twice (heavy) | 15.00 | 90.00 |
| Mugho dwarf | 8 to 10 | twice (bushy) | 14.00 | 120.00 |
| **SPRUCES (Picea)** | | | | |
| Colorado (blue and green) | 15 to 18 | twice (bushy) | 22.50 | 180.00 |
| Colorado (blue and green) | 9 to 12 | twice (nice) | 12.00 | 90.00 |
| Engelmann blue | 9 to 12 | twice (bushy) | 16.00 | 120.00 |
| Engelmann blue | 12 to 18 | twice (bushy) | 18.00 | 140.00 |
| White (alba) | 12 to 18 | twice (good) | 6.00 | 29.00 |
| Norway (excelsa) | 18 to 24 | twice | 8.00 | 60.00 |
| Norway (excelsa) | 12 to 18 | twice (good) | 6.00 | 29.00 |
| **FIRS (Abies)** | | | | |
| Concolor (Silver) | 12 to 15 | twice (bushy) | 24.00 | 180.00 |
| Balsam | 12 to 18 | twice (good) | 5.00 | 50.00 |

| | (inches) | (transplanted) | (100) | (1000) |
|---|---|---|---|---|
| **FIRS (Abies)**—*Continued* | | | | |
| Douglas | 12 to 15 | twice (bushy) | $16.00 | $140.00 |
| Douglas | 18 to 24 | twice (bushy) | 25.00 | 200.00 |
| Nikko | 15 to 18 | twice (bushy) | 20.00 | 180.00 |
| Veitch's | 12 to 15 | twice (bushy) | 12.00 | 100.00 |
| **HEMLOCK (Tsuga)** | | | | |
| Canadian | 15 to 18 | twice (bushy) | 30.00 | 270.00 |
| Canadian | 18 to 24 | twice (bushy) | 36.00 | 320.00 |
| **ARBORVITAE (Cedar)** | | | | |
| American | 12 to 15 | twice (bushy) | 10.00 | 80.00 |
| American | 18 to 30 | three (heavy) | 18.00 | 140.00 |
| Pyramidal | 12 to 18 | twice (bushy) | 20.00 | 180.00 |
| Oriental | 15 to 18 | twice (bushy) | 10.00 | 88.00 |

# KELSEY NURSERY SERVICE

Fifty Church Street, New York City

**Established 1878** **Member A. A. N.**




**FREE**

Hundreds of other equally good things are listed in our new catalogue — 66 pictures in full color. No other catalogue like it.

A copy will be mailed free on request if you mention AMERICAN FORESTS.

ARE YOU CITY WEARY?

HIT THE TRAIL

this summer with the

"TRAIL RIDERS of THE NATIONAL FORESTS"

Two outstanding explorations into Montana's Wilderness Areas—starting from Missoula.

TRIP NO. 1

15 Days from Chicago
Leaving July 6
$178—Complete

TRIP NO. 2

13 Days from Chicago
Leaving July 16
$164—Complete

Write today for folder showing itineraries and complete details.

TRAIL RIDERS
1713 K STREET, N. W.
Washington, D. C.

# THE C.C.C. BEGINS A NEW YEAR

Assured by the President that adequate funds will be made available, Robert Fechner, director of Emergency Conservation Work, and coordinate agencies have completed plans for another year of the Civilian Conservation Corps. The new year will begin April 1 when all present enrollees of the Forest Army will be "musterred out." Those desiring to re-enlist will be permitted to do so but the period of their enlistment will depend upon the number of months work they have already had in the corps. This is due to the desire of the President to accelerate the turn-over of the corps personnel in order to spread the benefits of relief work and man building among as many needy persons as possible.

Accordingly a new rule is being inaugurated to the effect that no enrolled member shall be eligible for re-enrollment if he has completed a full year in the Corps. While all present members of the Corps are to be given the opportunity to re-enlist April 1 they will be forced to retire July 1 provided they have then had one year of Corps work. Thereafter the men will automatically be required to withdraw upon completion of the quarter in which their year's enrollment expired. By this plan, it is anticipated that Corps benefits will be extended to at least 250,000 new men with probably a million dependents, all of whom have not yet received aid through the Corps. New enlistments, it is said, are to be made with special care as to whether or not the applicant and his dependents are actually in need of relief and those already in the Corps who cannot show urgent need of continued employment will be dropped.

Aside from this change, the Forest Army will be conducted through the second year along the same lines as the past twelve months. Plans have been made to care for 300,000 in approximately 1,470 camps. The estimated total cost for the second year is $300,000,000. A schedule of summer camps from which the men will work is nearing completion and when weather conditions permit, the transfer of the men from their present winter quarters will begin. The number of camps this summer in northern Idaho will be increased over last summer in an effort to complete the eradication of the blister rust disease which is threatening Inland Empire white pine valued at approximately $100,000,000. An increase in number of camps is also planned in the Tennessee Valley and in the erosion control areas recently established by the new Soil Erosion Service of the Department of the Interior.

According to Mr. Fechner, the Civilian Conservation Corps during the past year has shown highly beneficial results along five major lines. It has given employment at one time or another to 550,000 men, of whom 486,000 were enrollees, 15,000 foremen, 3,931 commissioned reserve officers and 802 Navy and Marine officers paid from E.C.W. funds, and 45,000 carpenters, plumbers and laborers employed in the construction of some 1,200 winter camps. Since the Emergency Conservation Work was initiated on April 5 last year, a total of 3,000 camps have been established. Of this number, 2,018 are C.C.C. camps proper, seventy-five are Indian camps, five are camps in Puerto Rico and one in Alaska.

In the field of relief Mr. Fechner reports that an average of 300,000 families have received monthly cash allowances ranging from $20 to $25 each from sons or relatives in the Civilian Conservation Corps. The men in the camps, he said, send to their parents or dependents each month an average of six and a half million dollars, while the total that has been paid out in the form of C.C.C. cash allotments up to January 1 amounted to $50,235,000.

As regards health and morale, tests made by the office of the Surgeon General of the War Department show that during the first enrollment period of six months the men gained an average of slightly over seven pounds in weight and a quarter of an inch in height. Instances of men gaining from ten to twenty-five pounds are not uncommon. Officials declare that the morale of the men has shown as marked an improvements as their health.

In summarizing the benefits of the Civilian Conservation Corps from the standpoint of business and industry, Mr. Fechner said that during the first eight months of the camps, a total of $110,000,000 dollars was expended for food stuffs, wearing apparel, automotive equipment, tools, building materials, and shelter. Among major items purchased were 14,000 trucks, 30,000 heating and cook stoves, 16,000 fire extinguishers, 1,500,000 pairs of shoes, 651 tractors, 572 tractor-trail builders, 100,000 axes, and scores of other articles ranging from dishes up to tons of dynamite.

"The camps have been a benefit also to the communities where established," Mr. Fechner said. "Farmers in the vicinity of the camps have been furnished a cash market for fruit, vegetables, butter, eggs and other farm products. The proprietors of stores located within striking distance of the camps have enjoyed increased business. Each camp spent in excess of $2,000 a month for food alone, and fifty per cent is normally expended in the vicinity of the camps."

Benefits in the reforestation field are given by Mr. Fechner by a summary of the more outstanding work accomplished. Among other things he mentions control of tree and plant diseases on over 2,000,000 acres and insect pest control on 1,355,000 acres; trees planted on 60,000 acres; erosion control on over a half million acres; construction of 100,000 erosion dams; completion of forest improvement work on 270,000 acres; construction of 13,300 miles of truck trails, 6,754 miles of telephone lines, and 5,840 miles of fire breaks.

The new schedule of camps for the third period of the Corps call for 431 National Forest camps, 297 state forest camps, 162 private forest camps, 122 erosion camps, 100 National Park camps. 270 state park camps, twenty-three soil erosion service camps and sixty-three miscellaneous federal camps, making a grand total of 1468 camps. The allocation of these camps by Corps Areas and states as tentatively approved March 15 is as follows:

Corps Area No. 1, Connecticut 16, Maine 15, Massachusetts 33, New Hampshire 13, Rhode Island 3, Vermont 36; Corps Area No. 2, Delaware 2, New Jersey 24, New York 66; Corps Area No. 3, District of Columbia 2, Maryland 13, Pennsylvania 95, Virginia 59; Corps Area No. 4, Alabama 30, Florida 25, Georgia 35, Louisiana 25, Mississippi 27, North Carolina 36, South Carolina 16, Tennessee 57; Corps Area No. 5, Indiana 24, Kentucky 31, Ohio 37, West Virginia 21; Corps Area No. 6, Illinois 44, Michigan 60, Wisconsin 44; Corps Area No. 7, Arkansas 39, Iowa 22, Kansas 11, Minnesota 48, Missouri 21, Nebraska 7, North Dakota 7, South Dakota 18; Corps Area No. 8, Arizona 20, Colorado 22, New Mexico 13, Oklahoma 23, Texas 43, Wyoming R-2 8; Corps Area No. 9, Wyoming R-4 11, California 75, Idaho R-1 60, Idaho R-4 10, Montana 15, Nevada 4, Oregon 39, Utah 10, Washington 42.

## SAPLING SAM RETURNS

*Try This One*

Frosh—"Do you make life-sized enlargements from snap-shots?"

Photographer—"Young man, that's our specialty."

Frosh—"Well, here's a snap-shot of the Grand Canyon."—*Wood Construction.*

*A Fine Lot Anyway*

Some gulls were following a ferry boat.

Irishman: "Nice flock of pigeons."

A tourist insisted: "Those are gulls."

"Well," said the Irishman, "gulls or boys, they're a fine flock of pigeons."

—*Santa Fe Magazine.*

*Beating the Stork*

"Mother," said Peggy, who had just seen a large toadstool sprouting, "do babies grow or can you buy them?"

"They grow, dear," replied Mother.

"Well," said the four-year-old, "I think there's one coming up in the backyard now."

—*Santa Fe Magazine.*

*Without Ornaments*

Now Eddie studied forestry,
A forester was he;
He traveled home for Christmas;
And was asked to trim the tree.

—*Kablegram.*

*Forgetful!*

Perry: Did you see any *Sequoia sempervirens* var. *adpressa* when you were in the West?

Byers: Oh. You mean redwood trees?

Perry: Yes. I can never think of that name.—*Service Letter.*

*Saving Our Forests*

Cronie: "How did you break your leg?"

Good Woodsman: "I threw a cigarette in a manhole and stepped on it."

—*The Forest Log.*

*Where's Elmer?*

Patrolman Ashur Epsom is living in town during the winter months to take treatments from an optician and get his toes serviced.

A city directory man rang Mr. Epsom's door-bell several days ago. Ashur answered it.

"How many in your family?" asked the man.

"Five," said Ash. "Me, the old lady, the kid, the cow and the cat."

"And the politics of your family?"

"Mixed," says Ash, "I'm a Republican, the old lady's a Democrat, the kid's wet, the cow's dry and the cat's a communist."

—*The Forest Log.*

Here's to the chigger—the bug that's no bigger
Than the point of a good sized pin.
But the point that he raises, itches like blazes
And that's where the rub comes in.

—*Selected.*


**ATLAS Offers Important Information on an Important Subject**

*Write today for your free copy*

Control of gullies in limiting soil erosion is a vital problem of conservation . . . and one which cannot be satisfactorily solved by hand labor alone. Wisdom and economy definitely dictate the use of explosives and this new booklet tells *how* to use them for best results.

"Gully Control with Explosives" places particular emphasis on horizontal bore hole blasting and stresses its many advantages. "Gully Control with Explosives" is concisely written and effectively illustrated with diagrammatic drawings that make clear the simplicity with which the necessary work can be accomplished.

You'll find this booklet interesting and profitable reading. Write today for a free copy.

**ATLAS POWDER COMPANY**

*A Proper Explosive for Every Blasting Requirement*

WILMINGTON • DELAWARE

Cable Address—Atpowco

BRANCH OFFICES

Allentown, Pa., Boston, Mass., Denver, Colo., Houghton, Mich., Joplin, Mo., Kansas City, Mo., Knoxville, Tenn., Memphis, Tenn., New Orleans, La., New York, N. Y., Philadelphia, Pa., Pittsburg, Kansas, Pittsburgh, Pa., St. Louis, Mo., Tamaqua, Pa., Wilkes-Barre, Pa.

ATLAS EXPLOSIVES

**ATLAS**

**EXPLOSIVES**

*West of Rocky Mountains—The Giant Powder Co., Cons., San Francisco, Cal.*



I HAVE PURCHASED SEED STOCKS AND LEASED THE FOREST NURSERIES OF

**The Long-Bell Lumber Company**

and shall continue to collect all Pacific Coast and Gulf States conifers and to grow planting stock for the Forester and the Nurseryman.

Site and Climatological Data Supplied
Special Collections Made by Arrangement

JOHN B. WOODS, FORESTER - LONGVIEW, WASH.

*Spring Events have begun at the* **CAVALIER**

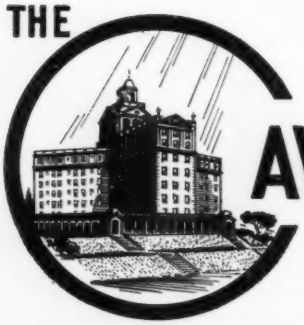
Golf on the famous championship courses of the Cavalier and Princess Anne Country Clubs . . . adjacent to the Hotel. Excellent stables of forty trained hunters, and miles of rambling bridle paths. Indoor salt water swimming pool and baths.

The joy of living attains new pleasure at this wonder spot—in the springtime. Easily reached by motor, train or boat.

Illustrated booklet sent on request.

SIDNEY BANKS
Managing Director

THE CAVALIER HOTEL
VIRGINIA BEACH
VIRGINIA



SEED
FOR
FOREST & NURSERY

BLACK LOCUST SEED
FOR IMMEDIATE DELIVERY

HERBST BROTHERS, INC.
TREE AND SHRUB SEED SPECIALISTS
92 WARREN ST. NEW YORK, N. Y.


## Park Highway in Vermont and New Hampshire to be Studied

A survey to determine the advisability as well as the location and possible accomplishments of a parkway through the mountains of Vermont and New Hampshire is being cooperatively conducted by the National Park Service and the Bureau of Public Roads. Officials in charge of the survey declare this will not necessarily be a sky-line drive, and that the $50,000 allotted from P.W.A. funds is to be used entirely for a preliminary survey with no expenditure for construction.

## New Edition "Standardized Plant Names" is Planned

A new edition of Standardized Plant Names is to be issued, according to a recent announcement of the American Joint Committee on Horticultural Nomenclature. The action was decided upon at a meeting of the committee held in New York January 15. The revision will be undertaken at once. Two important proposals were made and will be acted upon if possible. One is to include in the new edition a number of terms used in the lumber industry to describe certain trees. Although not necessarily horticultural, these names are at the same time in constant practical use, and the Committee felt that their inclusion would add to the completeness of the volume. The other proposal contemplates inviting the American Pharmaceutical Association to cooperate in preparing a list of some 200 names of drug plants which, though commercially important, are not at the present time listed in the United States Pharmacopoeia and the National Formulary.

At the meeting in question Dr. J. H. McFarland was reelected chairman and Harlan P. Kelsey secretary of the Committee.

## "Stop Gullies" Posters Available

Prompted by increasing activity in erosion control, the United States Forest Service has prepared and is distributing 50,000 copies of a poster entitled "Stop Gullies—Save Your Farm." The poster consists of several "before and after" pictures showing efforts to control examples of excessive erosion and the results achieved after a few years. Copies of these posters are available from the United States Forest Service, Washington, D. C.

## Wisconsin National Forests Become Game Refuges

A forward step in the management of wild life in the National Forests in Wisconsin has been taken by the State Conservation Commission by the passage of a resolution approved by Governor Schmedeman January 29 making the two National Forests in the State virtual inviolate game refuges by prohibiting hunting, killing, or trapping of game animals within their boundaries. The two forests in question are the Nicollet National Forest and the Chequamegon National Forest. The Commission's order provides that there shall be a closed season at all times for the taking or killing of any or all varieties of fur bearing animals on these two National Forests. The order became effective last month. The action was taken by the Commission following a determination "that it is reasonably necessary in order to secure the perpetuation and maintenance of an adequate supply of fur bearing animals and to provide safe retreats in which such animals may breed and replenish themselves."

## Connecticut Builds Memorial Trail

Through the activities of the C.W.A., Connecticut has constructed the Jessie Gerard trail in the People's Forest in the town of Barkhamsted, as a memorial to the late Mrs. Jessie Bryant Gerard, of New Haven, who during her lifetime advocated so strongly the preservation of the forest resources of the nation. With Governor Gifford Pinchot of Pennsylvania, Mrs. Gerard took part in many an epic battle in Washington to secure the proper organization of the National Forests, and in her later years was instrumental in enlightening the people of Connecticut of the need of better forests.

The Jessie Gerard trail has its beginning on the River Road on the east bank of the west branch of the Farmington River in Pleasant Valley at the site of the Indian Village, called Barkhamsted Lighthouse. A crew of twenty C.W.A. workers have laid 295 stone steps which rise through a picturesque ravine that is bridged in two places by rustic bridges.

The trail extends north through the forest at an elevation of about 1,100 feet for more than two miles.

## Wildlife Program Proposed

Appointment of a Restoration Commissioner to create a Wildlife Division out of existing government personnel and to serve under the Secretaries of Agriculture, Interior and Commerce as coordinator of the wildlife activities of the Forest Service, National Parks Service, Biological Survey, Bureau of Fisheries, Division of Erosion Control and other government agencies is included in the report of the President's Committee on Wildlife Restoration, submitted to the Secretary of Agriculture by Thomas H. Beck, Jay N. Darling, and Aldo Leopold on February 8. This committee, appointed by Secretary Wallace on January 2, also recommended that the Biological Survey be known as the "Wildlife Service," and that its administrative officer be known as "Director."

The plan presented by the Committee recommends the immediate purchase of four million acres of sub-marginal land and the ultimate acquisition of ten or twelve million acres additional to serve as refuges and nesting places for migratory water-fowl, shore birds, upland game birds, song, insectiverous and other non-game birds, and for the protection of big game animals. Initiation and subsequent administration and development of this major program, the Committee recommends, be financed by an allocation of $25,000,000 from funds available for the withdrawal of submarginal lands from production, $25,000,000 of public works money, revenue to be derived from the sale of migratory bird hunting stamps, a new allocation of the present excise tax on arms and ammunition and from regular appropriations under the Norbeck-Andresen Migratory Bird Conservation Act.

To insure immediate possession and control of lands suitable for migratory water fowl and shore-bird breeding and nesting places, and to allow time for careful surveys, the Committee suggests that the land be taken on a one year lease with option to buy at an agreed price any time during the lease period. It also proposes the withdrawal of grazing privileges on extensive tracts of Public Domain and in the National Parks and Forests, and the repurchase of water rights in such areas.

To provide caretakers under the direction of trained district supervisors, the Committee proposes the establishment of subsistence farm homes on the refuge areas, with the understanding that the farmer-caretakers will receive part of their cash income for work done on the refuges.


Whenever you plant—

TREES or SHRUBS
LAWN or FLOWERS
*you need*

PEAT MOSS

IT is well known that the difference between a "rich" soil and a "poor" soil often means the difference between success and failure in planting. And unfortunately it frequently happens that the soil is worst just where we want to plant. But while we may recognize the fact that a soil is in bad condition and unfitted for growing trees, shrubs, etc., sometimes we are not so sure just how to go about making a poor soil good.

There are many factors which influence the making of a good soil. The U. S. Dept. of Agriculture's Bulletin No. 290 says, "By far the most valuable constituent of a soil is its organic matter," and adds: "As a source of organic matter the better grades of peat moss play a significant part in modifying the physical, chemical and biological properties of soils, and in making them more favorable for the growth of plants." Peat moss creates the most favorable conditions for the development of roots, enabling them to penetrate freely in search of food and water.

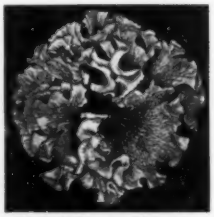
The Davey Tree Expert Company and many other professional organizations, as well as hundreds of thousands of individual home owners have found that the advice contained in this U. S. Dept. of Agricultural Bulletin is correct, and that Peat Moss is really the *only* reliable source from which this necessary humus can be obtained. Mixed into the soil, Peat Moss induces rapid and vigorous root growth. Although do not make the mistake of using it sparingly. Peat Moss should be used as the Davey Tree Expert Company uses it—one half of all the fill-back on every tree and shrub they plant, dug down *into* the soil.

*Let us give you further information about peat moss and how to use it.*

PEAT IMPORT CORPORATION
155 John Street
New York

**DIENER'S Monster Petunias**

Grow these everblooming prize-winners. Largest and finest giant Petunias in the world. SINGLE $.50 per package; DOUBLE Petunias (either frilled or smooth petaled) $1.00 per package.



*Ruffled Monster Petunia (single)*

Diener's new giant white double Shasta Daisy, most outstanding 1933 novelty. Flowers over five inches across on long stems. PRICE: $.25 per package. Dahlia seeds. Diener's giant double, the world's greatest perfected flower twelve weeks from sowing. Flowers of enormous size on perfect, wiry stems. Package, $.75.

Catalog of exceptional Gladiolus, Petunias, Dahlias, Delphinium and other great novelties, free on request.

**RICHARD DIENER, Oxnard, Calif.**
***Plant, Seed and Bulb Grower***

The New Deal Brought Reforestation

CUPSUPTIC Nursery's Hardy, Northern Grown Evergreens are ready for your planting program.

We have a fine lot of reforestation stock well adapted to varying conditions.

*Send for our Spring Price List*

Let us bid on your planting requirements.

BROWN Company — DEPT. FI-2
*Cupsuptic Nursery*
*Oquossoc, Maine*

**TREES pruned easily**

**Reforestation Projects Should Include BARTLETT EQUIPMENT**
**Compound Lever Tree Pruners, Pole Saws, Cross Cut Saws and Tree Surgeons' Supplies**
***Write for free illustrated catalog showing complete line.***
**BARTLETT MANUFACTURING CO.**
**3019 E. Grand Blvd. Detroit, Michigan**

DECIDUOUS TREE SEEDLINGS
FOR FOREST PLANTING
Am. Beech, Tupelo Gum, Magnolia acuminata, White Ash, Sugar Maple, Dogwood, Tulip Tree, Am. Elm and Sweet Gum.
*Write For Prices.*
THE JENKINS NURSERY
Winona, Columbiana County, Ohio.

**Evergreen Tree Seedlings**
AT LOWEST PRICES
for
FOREST PLANTING
ELFGREN NURSERIES
EAST KILLINGLY, - CONNECTICUT


# FORESTRY IN CONGRESS

By G. H. COLLINGWOOD

The triumvirate of bills popularly known as the Walcott-Kleberg "Duck Stamp Bill" (S. 2633 and H. R. 5632), Senator Robinson's wildlife refuge bill (S. 2277), and the bill (H. R. 7672 and S. 2529), coordinating the activities of all Government departments in conserving wildlife,—all sponsored by the Senate and House Committees on Wildlife Conservation were passed by the House on March 5, after having received approval by the Senate on February 6.

The "Duck Stamp Bill" or "Migratory Bird Hunting Bill" which provides for a federal tax of $1 from each hunter who hunts ducks or other migratory birds, is expected to provide from $600,000 to $1,000,000 a year, ninety per cent of which will be used by the Department of Agriculture for the purchase, administration and maintenance of inviolate migratory bird sanctuaries. The remaining ten per cent will be used to reimburse the Post Office Department for printing and issuing the "Migratory Bird Hunting Stamps" and for general administration.

The wildlife refuge bill permits the establishment of game sanctuaries within National Forests when approved by the state legislature. The coordination bill authorizes the Secretaries of Agriculture and Commerce to cooperate with Federal, state or private agencies in rearing, stocking and increasing the supply of animals and fish, and in developing a nation-wide program of wildlife conservation and rehabilitation. The Act also authorizes investigations on the recovery of wastes to prevent the pollution of streams; the use of impounded waters for fish culture stations, and migratory bird refuges; the protection of wildlife resources on the Indian Reservations; and surveys of the wildlife resources of the Public Domain.

The title "National Park Service" is restored in the Interior Appropriation Act signed on March 2 to the Bureau having charge of national parks, buildings and reservations as assembled under the recent reorganization. No changes were made in the total appropriations of $6,319,640 for National Parks.

The Senate subcommittee on Appropriations for State, Justice, Commerce and Labor Departments has recommended restoring $12,000 to the Department of Commerce for administering the Federal Black Bass Law, which would permit the continuation of existing activities. The Committee also added $2,750 for a fisheries survey for the State of Mississippi.

The Agricultural Appropriation Bill, passed by the House on March 21, is now before the Senate. As reported out by the Senate Committee on Agricultural Appropriations, the bill is amended to increase by $300,000 cooperative fire prevention and suppression under the Clarke-McNary Act. This action brings the total appropriation for this activity, as recommended by the bill, to approximately one and one-half million dollars.

The Senate Committee also amended the bill to provide $300,000 for Dutch elm disease control and $360,000 for gypsy and brown tail moth control. A further item of $50,000 was included for Dutch elm disease research. The committee, however, did not restore the white pine blister rust item. More adequate clarification by Secretary Ickes, however, of the Public Works Board's resolution of February 15 may make available approximately $1,000,000 of P.W.A. funds for blister rust control during the coming year. The restoration of $572,741 for the Biological Survey, which was made by the House Committee, has been retained by the Senate Committee.

Representative Charles A. Wolverton of New Jersey attempted to insert a new clause in the bill and add $300,000 for the control of gypsy moth and brown-tail moth. Before this amendment was defeated, Representative Buchanan, Chairman of the Appropriations Committee, submitted a Resolution from the Public Works Board authorizing the Forest Service and the Bureau of Entomology and Plant Quarantine to spend Public Works funds included in the Budget for 1935 for forest planting on National Forests, for the forest survey, for blister rust control, gypsy and brown-tail control, Dutch elm disease control and for several other items, which had been removed from the bill, but given specific allotments of Public Works money. This was later clarified by Secretary Ickes to assure the use of the allotted moneys during all of the coming field season, regardless of fiscal years.

Efforts to secure larger appropriations for cooperative forest fire prevention and suppression, and for the control of blister rust, gypsy moth and Dutch elm disease were continued in the Senate. Need for increased appropriations for cooperative forest fire control was emphasized by the inability of the Forest Service to secure Public Works funds, or to have the Budget Bureau release nearly $400,000 of impounded funds for this purpose.

With passage of House Joint Resolution 278 on March 2, the Secretary of the Interior is given until September 4 to adjust contract prices for the sale of timber on the Klamath Indian Reservation. More recently Representative Knute Hill of Washington has introduced a similar bill (H. R. 8494) to apply to timber sales on the Quinault Indian Reservation and Senator Smith has introduced S. 2856 to apply to National Forest timber sale contracts.

What promises to be a model for other National Forests in protecting the Federal Government and the general public from the illegal use of mineral claims for private gain is included in S. 1506, passed by the Senate on February 20, revising the mining laws as applied to the Mount Hood National Forest and limiting the surface uses which a mining locator may make of his claim. Pending the passage of a bill of national scope, similar bills for each of the several National Forests where recreation is of significant importance may solve an increasingly difficult problem.

Arguments for the transfer of the United States Botanic Garden to the Department of Agriculture under S. 1839 were submitted to the joint Library Committee of the Senate and the House on February 20. At present $114,000 is appropriated annually to administer the Botanic Garden as an independent institution where it has no direct relationship with the Department of Agriculture. If the bill passes, the Botanic Garden with its new buildings near the Capitol will be placed under the Bureau of Plant Industry and administered in connection with the National Arboretum. The American Forestry Association joined the American Association of Nurserymen, the Garden Clubs of America, the Massachusetts Horticultural Society and other national organizations in recommending the early passage of the bill.

## Dean Miller of Idaho Dies

Francis Garner Miller, Dean of the School of Forestry, at the University of Idaho, Moscow, Idaho, since 1917, died on March 8 in Moscow following a heart attack.

Born in Illinois in 1866, he secured degrees from the Iowa State Teachers College, University of Iowa, and Iowa State College before graduating from the Yale Forest School in 1903. Following a brief period in the United States Forest Service, he served as professor of forestry at the University of Nebraska from 1903 to 1907 and as Dean of the School of Forestry at the University of Washington from 1907 to 1912. Thereafter, for five years he was manager of the Wenatchee Columbia Fruit Company of Wenatchee, Washington. In 1917 he was appointed Dean of the School of Forestry of the University of Idaho, where he has served continuously, except for a year of study and travel in Europe during 1932. A member of The American Forestry Association for the past twenty-two years, he was widely known among foresters as well as educators, and was the author of numerous bulletins and articles on forestry.

## Lumber to Have its Mark

By action of the Lumber Code Authority on February 12 the lumber industry will inaugurate a policy of marking its timber products in order to indicate plainly the grade, size, species, source of manufacture, and whether seasoned or unseasoned. Regulations to this effect have been submitted to the National Recovery Act administrator, and upon approval of President Roosevelt the marking practice will become mandatory upon the industry.

## Artists to Make C.C.C. Immortal

The tanned and loosely clad Civilian Conservation Camp forestry workers will be immortalized soon by unemployed artists working under the Public Works art project, according to an announcement by the Army's Eighth Corps Area Headquarters at Fort Sam Houston, Texas. About twenty-five artists are being sent to C.C.C. camps in states of the West and South to make a pictorial record of the types of men, their reforestation work and the scenic beauties of the forest. The brush wielders are to be picked by regional committees of the PWA art project, and the Army will provide them with quarters at camps. The artists will be directed by technical supervisors of the Forest Service and the National Park Service.

## Smoky Mountain Shenandoah Highway Progress

A $4,000,000 allotment from the Public Works Administration to the National Park Service assures the early construction of a 500 mile national parkway from the Shenandoah National Park in Virginia to the Great Smoky National Park in Tennessee. This allotment is supplementary to $2,224,182 now being spent for surveys and for the construction of new and the improvement of old roads within the Great Smoky National Park.

The entire highway, which will cost about $16,000,000, has not yet been fully located. Following conferences held in Baltimore early in February with representatives of the Highway Departments of Virginia, North Carolina and Tennessee, the principle control points between the southern boundary of the Shenandoah National Park and Roanoke, Virginia, were determined. Survey parties are now at work in Virginia establishing grades, but the entire location between the two national parks may not be completed before mid-summer.

## Naval Stores Code Promotes Forestry

The naval stores code which became effective February 19, while having for its primary object the regulation of production to demand, contains a restrictive provision in the interest of conserving the growing trees upon which the industry is dependent. It provides that no trees under nine inches in diameter shall be chipped and that only one face can be allowed on trees under fourteen inches in diameter. This restriction will be a decided step forward in conserving the young turpentine trees which past practice has chipped so heavily and when so small that the lives of the trees have been early terminated.

## Restoration of Kankakee Marsh Being Studied

Indiana, through its Conservation Department aided by Civil Works funds, is making a topographic survey to determine the feasibility of restoring all or part of the Kankakee Marsh which, before its destruction by drainage, was one of the most noted havens for birds and wildlife in the middle West. The marsh extended from a point southwest of South Bend to the Indiana-Illinois state line and included an area of about 400,000 acres along the Kankakee River.

A number of years ago extensive drainage works designed to make the area available to agriculture largely destroyed the natural character of the region. The reclaimed land was later found to be unsuitable for agricultural purposes, and a more serious result was that the drainage of the marsh brought about a lowering of the water table in adjacent areas, thereby reducing land values.

The survey is being made as a Civil Works project with a force of seventy-five men who are engaged in the compilation of data and the preparation of maps of the former marsh lands under the direction of conservation officials.

## Forest Service to Train Radio Men

An intensive training course in radio communication for representatives of the nine National Forest regions was initiated by the United States Forest Service March 15. The training class is being held at the Forest Service Radio Shop in Vancouver, Washington, and will last for about three weeks.

The purpose of the course is to train at least one forest officer from each region to a point where he will be capable of handling routine radio communication matters, plan adequate systems of radio communication in the National Forests and head the radio work in his region.

The course will be limited to forest officers selected from the regular rolls of the service. Use of radio for emergency communication and as a supplement to the telephone systems in the National Forests has been developed rapidly by the Forest Service in the last three years.

This **PLUMB AXE** was built for woodsmen

PLUMB learned just what woodsmen needed in an axe. Then the Plumb Axe was built to those specifications.

The blade clears itself! It is scientifically tapered to "roll" the chip and prevent sticking in the cut.

A Plumb is balanced! The handle is hung to a precise standard, so that the tool has a natural fall. All the force of your swing goes into the cut.

The edge stays sharp! Hardening and tempering are done in modern furnaces, operated by fool-proof electrical controls.

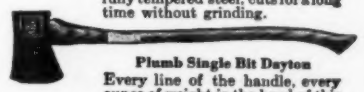
A Plumb has no weld to break out! Every Plumb, from head to cutting edge, is one solid piece of special-analysis steel.

Try this axe of expert woodsmen. It costs no more. Look for the Red Handle and Black Head.

FAYETTE R. PLUMB, Inc., Phila., U. S. A.

**FREE** Write for your free catalog of Plumb Tools for Forestry Conservation and Highway Projects. Just printed. Illustrates and describes each tool.

**Plumb Double Bit Michigan**
This axe was designed by Peter McLaren, after numerous consultations with choppers in all parts of the country. Its keen edge, of carefully tempered steel, cuts for a long time without grinding.



**Plumb Single Bit Dayton**
Every line of the handle, every ounce of weight in the head of this axe is worked out to give that perfect balance so necessary to the axe user.

NURSERIES

EVERGREEN TREES
For Ornamental or Forest Planting
Trees of known quality; raised from SEED at our Nurseries under personal supervision, based on 20 years' experience. All varieties. Sizes range from seedlings, thru 3, 4 or 5 year transplants, up to 20 feet tall. Prices astonishingly reasonable. Write for Catalog and know about our guarantee.
FRANKLIN FORESTRY Co.
89 STATE ST. BOSTON, MASS.
NURSERIES AT COLRAIN - SUDBURY - PLYMOUTH

Trees for Forest Planting
PINE :-: SPRUCE
Firs, Arborvitaes and Other Conifers. We raise all our trees in our own nurseries
KEENE FORESTRY ASSOCIATES
KEENE, NEW HAMPSHIRE

EVERGREEN SEEDLINGS
FOR FOREST PLANTING
Scotch, Austrian and Norway Pines; Norway and White Spruce—Many Other Varieties.
*Write For Prices.*
THE JENKINS NURSERY
Winona, Columbiana Co., Ohio 18 S. Main St.

Evergreen Nursery Stock
For All Purposes
Pine, Spruce, Fir, Cedar
Our stock is thrifty and sturdy
Prices reasonable Write for catalogue
CENTRAL MAINE FOREST NURSERY
SKOWHEGAN, MAINE

EVERGREEN TREES
FOR FOREST PLANTING
CERTIFIED White Pine, free from blister rust, Norway and White Spruce, Scotch and Red Pine and other varieties. Know our reasonable prices. Get our figures on Contract Planting.
Western Maine Forest Nursery
Dept. A-44, Fryeburg, Maine

Young Aristocrats
Rare and unusual grafted trees and shrubs about 12 inches high at amazingly low prices. Azaleas, Rhododendrons, Magnolias, Japan Maples, Franklinia tree, etc. Balled and burlapped; can be shipped any time. Write for our new illustrated catalogue.
KELSEY NURSERY SERVICE
50 Church Street, New York City

## Forest Homesteads Approved in Wisconsin

Organization of the Winconsin Forest-Farm Homestead Corporation, Inc., for the benefit of isolated farm families stranded on cut-over forest lands in northern Wisconsin within the boundaries of National Forest purchase areas has been announced by Secretary Ickes of the Department of the Interior. With $750,000 loaned the Wisconsin Corporation by the Federal Subsistence Homestead Corporation, opportunities will be given approximately 400 families, many of whom are now on relief, to re-locate on better lands within the same or nearby counties. The homesteads will be located in compact groupings on small tracts of good soil and the settlers loaned money to be amortized over a period of twenty years. In effecting the exchanges of land the farmer who applies for a homestead will be given credit for the land he now occupies on the basis of its value.

In their new locations, the heads of these families will divide their time between farming operations and work in federal, state and county forests. The farms which the families will leave, together with other areas in the region, will be consolidated by the National Forest Reservation Commission into national forests, thus sharply reducing the land area in the region devoted to commercial farm production.

The project is being developed and will be carried out by the Subsistence Homesteads Division of the Department of the Interior, under the direction of M. L. Wilson, Director, in cooperation with the United States Forest Service, the Winconsin Conservation Department, the University of Wisconsin, and local units of Government. The Civil Works Administration will allocate labor to carry out preliminaries of the project, including surveying and preparation of the land for use.

"The project is the fore-runner of a type of planned resettlement," said Director Wilson, "which will have an important place in the nation's development in the next quarter century as lands are gradually brought to their best use."

The program of the Wisconsin Forest-Farm Homestead Corporation, Inc., contemplates zoning the use of land for forest or farming in some twenty northern Wisconsin counties and may ultimately make possible relocation of a thousand families. Purchase of the submarginal farms and their reservation for forest purposes will prevent a repetition of settlement, and remove the possibility of repeating the economic tragedies which confront many of the farmers now living on poor lands isolated from communities.

These compact forest-farming communities adjacent to publicly owned reservations will furnish labor adapted to forest work, opportunities for which are expected to increase as conservation in the area advances. An important point in the program is that forest fire hazards due to scattered farming operations will be reduced, while the serious fire risks to the farmers now living in the midst of inflammable forests will be eliminated. Furthermore, reduction of local governmental costs for schools, roads and other public services, which have been high because of the sparseness of settlement, are expected to be reflected in reduced taxes on farm lands. Large areas of submarginal land will be permanently removed from cultivation, while settlers will have the opportunity of improving their economic and social conditions.

This is one of several projects to be financed with the $25,000,000 fund allotted to the Subsistence Homestead Division of the Interior Department. Applications have been filed for others in which forest and farm activities would be coordinated, from Connecticut, Florida, Arkansas, Louisiana and Texas. The Division reports that $4,000,000,000 would be required to develop all the applications submitted.

## Redington Retires as Biological Survey Head

After seven years as chief of the Biological Survey, United States Department of Agriculture, Paul G. Redington returned on March first to the Forest Service, where he served for twenty-three years prior to becoming head of the Department's Wild Life unit. The transfer was made at Redington's own request. W. C. Henderson, associate chief, was designated as acting chief of the Biological Survey pending selection of Mr. Redington's successor.

Mr. Redington has been in the service of the Department of Agriculture for thirty years. Graduating from the Yale Forest School in 1904, he entered the Forest Service in the early days of that organization and spent twenty years in National Forest work in the West, first as inspector and later as supervisor of the Sequoia National Forest, California, and district forester at Albuquerque and San Francisco. He was selected as associate chief of the Biological Survey on February 16, 1927, and was made chief of the bureau upon the retirement of Dr. E. W. Nelson on May 9 of the same year.

In announcing Mr. Redington's transfer Secretary Wallace expressed appreciation of his work as head of the Biological Survey during a troublesome period in the bureau's history.

## C.C.C. Stories Broadcast

In an endeavor to familiarize the public with the work and various activities of the Civilian Conservation Corps, an interesting broadcast was made from Station WGBF, Evansville, Indiana, on March 4th and March 11th, through the arrangement by the officers of the Headquarters District of Western Indiana, at Jasper. The feature of each Sunday afternoon program was the dramatization of one of the stories of the enrollees of the Corps, which have been appearing for several months past in the pages of this magazine. These true stories,—human documents of vivid interest, were offered in the contest of The American Forestry Association titled "What the Civilian Conservation Corps Has Done for Me?" On March 4th the story "It Has Given Me A Niche To Fill," from the February issue, written by Lee G. Crutchfield, Jr., of Yorktown, Virginia, was given, and on March 11th "The Dawn of a New Day" written by Allen Cook and published in the December number of AMERICAN FORESTS.

## Eastern National Forests Gain

The National Forest Reservation Commission at a meeting on February 21 approved for purchase 377,300 acres for National Forest purposes, thereby bringing the total area added to the eastern system of National Forests since January 1 to 1,190,000 acres. The Government's acquisition work has been thus accelerated by the allocation last spring of $20,000,000 of Emergency Conservation Work funds.

The areas approved for purchase on February 21 are in forty-two units, the largest purchases being 75,000 acres for the Monongahela National Forest, West Virginia; 50,000 acres for the Wambaw unit of South Carolina; and 37,000 acres for the Ouachita National Forest in Arkansas and Oklahoma. Three National Forests in Minnesota were increased by approximately 40,000 acres, five in Wisconsin by 36,000 acres, and five in Michigan by 31,000 acres. Missouri and Illinois, relatively new states as far as National Forests are concerned, gained 18,000 and 4,000 acres, respectively.

The 377,300 acres will cost the government $941,850, or $2.50 an acre. The lands will be placed immediately under Forest Service administration and protection. The new purchases by regions are: New England, 5,239 acres; Appalachian, 108,511 acres; Southern Pine, 81,215 acres; Ozark and Central Mississippi, 75,245 acres; and Lake States, 107,092 acres.

## Peavy Promoted to President of Oregon State College

Professor George W. Peavy, Dean of the Forestry School of the Oregon State College in Corvallis, Oregon, and associated with the institution for the past twenty-five years, was recently appointed acting president of the State College to succeed former President William J. Kerr, who is now Chancellor of Institutions of Higher Learning, with headquarters at Eugene, Oregon.

Professor Peavy is the third forester given executive responsibilities in a State College or University during the past few years. The others are Hugh P. Baker, President of Massachusetts State College at Amherst, and Hugo Winkenwerder, Acting President of the University of Washington at Seattle.

## Heintzleman Named Forest Code Cooperator

B. F. Heintzleman, Assistant Regional Forester in Alaska for the past several years, has been selected to represent the Forest Service in carrying out the new conservation provisions of the Lumber Code. Mr. Heintzleman will aid in developing specific conservation practices to be carried out through local code supplements. Under agreements reached in the Washington meetings, regional subdivisions under the Code will prepare supplements covering rules of forest practice for their localities and submit them to the Code Authority for approval. After approval by the Lumber Code Authority the conservation rules will be referred automatically to the National Recovery Administration, and unless objection is made by the Administration, will become effective within a specified time.


# *Why* TAKE CHANCES

## OUR TREES GUARANTEED TO LIVE...COST NO MORE

## Compare These Prices with Any Others

**2-2 indicates 2 years in seed beds, transplanted, and 2 years in transplant beds.**

### EVERGREEN TREES

| | Age | Size | Per 1000 |
|---|---|---|---|
| 5 yr. Red Pine | 2-2-1 | 6-10 in. | $18.00 |
| 5 yr. Austrian Pine | 2-1-2 | 8-15 in. | 20.00 |
| 4 yr. Scotch Pine | 2-2 | 8-15 in. | 14.00 |
| 4 yr. Mugho Pine | 2-2 | 5-10 in. | 14.00 |
| 3 yr. European Larch | 2-1 | 12-18 in. | 15.00 |
| 5 yr. Colo. Blue Spruce | 2-2-1 | 6-10 in. | 30.00 |
| 3 yr. Balsam Fir | 2-1 | 3- 6 in. | 15.00 |
| 4 yr. Norway Spruce | 2-2 | 5-10 in. | 14.00 |
| 6 yr. Norway Spruce | 2-2-2 | 6-12 in. | 18.00 |
| 6 yr. Norway Spruce | 2-2-2 | 12-18 in. | 22.00 |

White Spruce same sizes and prices as Norway Spruce.

### 100 TREES FOR $3.00 PREPAID

| | |
|---|---|
| American Arborvitae | 3 yr. Transplanted |
| Black Hill Spruce | 3 yr. Transplanted |
| Douglas Fir | 4 yr. Transplanted |
| Englemann Spruce | 3 yr. Transplanted |
| Mugho Pine | 4 yr. Transplanted |
| Norway Spruce | 4 yr. Transplanted |
| Red Pine | 4 yr. Transplanted |
| Scotch Pine | 4 yr. Transplanted |
| White Spruce | 4 yr. Transplanted |
| Blue Spruce | 4 yr. Transplanted |

25 each of any four kinds for $3.00.
Not less than 25 of a kind at these prices.

### BIG FLOWERING SHRUBS

**10 for $3.00 PREPAID**

***Your Choice, Any Assortment.***

Beauty Bush; Butterfly Bush; Snowball; Deutzia; Flowering Almond; Forsythia or Golden Bell; Honeysuckle, white, red or pink; Hydrangea (Hills of Snow); Hydrangea P. G.; Mock Orange; Spirea, red, white, rose; Weigela.

### NUT TREES

**12 to 24 Inches Tall**

**10 for $2.00 PREPAID**

American Beech; Black Walnut; Butternut; Hazelnut.

### SHADE TREES

**12 to 24 Inches Tall**

**10 for $2.00 PREPAID**

White Ash; Mountain Ash; White Flowering Dogwood; American Elm; Siberian Elm; Honeylocust; Red Maple; Silver Maple; Chestnut Oak; Pin Oak; White Oak; Carolina Poplar; Lombardy Poplar.

Other Varieties.

## WESTERN MAINE FOREST NURSERY

**DEPT. A-44** **FRYEBURG, MAINE**



## Application for Membership in The American Forestry Association

*American Forests is sent monthly to Members*

Date.....

**The AMERICAN FORESTRY ASSOCIATION,**
**1713 K Street N. W., WASHINGTON, D. C.:**

I hereby apply for membership in The American Forestry Association and enclose $.....

**INDICATE CLASS OF MEMBERSHIP DESIRED**

- ☐ Subscribing Membership, per year..... $4.00
- ☐ Contributing Membership, per year..... 10.00
- ☐ Sustaining Membership, per year..... 25.00
- ☐ Life Membership (no other dues for life)..... 100.00
- ☐ Patron Membership (no other dues for life) 1,000.00

Canadian Postage 25c extra, Foreign 50c extra, on Subscribing Memberships

**Please Letter or Type Name and Address**

Name .....

Street .....

City and State.....

Business or Profession.....

April, 1934.

## The New York State College of Forestry

SYRACUSE, N. Y.

Undergraduate courses of four years are offered in forestry leading to the degree of Bachelor of Science. There is also opportunity for graduate work in several branches of forestry leading to advanced degrees.

The College has ample laboratories and classrooms in William L. Bray Hall and the Louis Marshall Memorial Building. It has forest properties approximating 20,000 acres that serve for demonstration, research and instruction in forestry.

Special laboratories for instruction in wood technology, in pulp and paper-making, in kiln-drying and timber-treating and a portable sawmill are other features of this institution.

*Catalog Mailed on Request*

SAMUEL N. SPRING, *Dean*

## School of Forestry

**University of Idaho**

**MOSCOW, IDAHO**

Offers thorough training in Practical Forestry, preparing for Federal, State, and private work.

Four and Five Year Courses, leading to the degrees of Bachelor of Science in Forestry and Master of Science in Forestry respectively.

Opportunity is given to specialize in General Forestry, Logging Engineering, and Range Management.

Large logging and milling operations, important wood-working industries, also extensive Federal, State, and private forests, near at hand. Excellent opportunity for summer employment.

*Write for further particulars*


# Conservation Calendar in Congress

**Published monthly while Congress is in session as a service to the members of the American Forestry Association. This calendar contains bills introduced at the Second Session of the Seventy-third Congress from February 10 to March 14, inclusive. Whenever acted upon, previously listed bills are described in the Calendar; otherwise they may be considered as in the same status as when last printed.**

### BILLS APPROVED

H. R. 6951—TAYLOR of Colorado—Appropriations for the Department of the Interior. Approved March 2. Public Law 109.

H. R. 5632—KLEBERG (S. 2633—WALCOTT)—"Duck Stamp Bill" to provide funds for acquisition of migratory bird sanctuaries, refuges and breeding grounds and to supplement the Migratory Bird Conservation. Passed by Congress and awaiting approval of President.

S. 2277—ROBINSON of Arkansas—to establish fish and game sanctuaries in National Forests. Approved March 10. Public Law 120.

S. 2529—WALCOTT (H. R. 7672—KLEBERG—Report No. 850. February 26) To promote the conservation of wild life, fish, and game, and for other purposes. Approved March 10. Public Law 121.

H. J. Res. 278 (S. 1513)—Extending authorization of Secretary of the Interior to revise existing contracts for sale of timber on Indian lands until September 4, 1934. Approved March 2. Public Resolution No. 15.

### APPROPRIATIONS

H. R. 8134—SANDLIN—Appropriations for Agricultural Department for 1935. Report No. 820. Passed House March 2. Passed Senate amended March 14. Conference Committee.

### NATIONAL FORESTS

S. 2856—SMITH—Authorizing the adjustment of existing contracts for the sale of timber on National Forests. Agriculture and Forestry. February 21. H. R. 8461—BUCK—Agriculture. March 3.

S. 1506—STEIWER—To amend the United States mining laws applicable to the Mount Hood National Forest in Oregon. Report 267. Passed Senate February 20. House Committee Public Lands.

S. 1982—MCNARY—Mount Hood National Forest Lands. To Agriculture and Forestry. February 7. Report No. 269. Passed Senate February 20. Public Lands.

H. R. 8236—SAMUEL B. HILL—To authorize adjustment of the boundaries of the Chelan National Forest in Washington. Public Lands. February 24.

H. R. 4934—PIERCE—To revise the boundaries of the Fremont National Forest in Oregon. Agriculture. Report 842. February 24. Union Calendar 137. S. 1983—MCNARY—Agriculture and Forestry. Report No. 311. Passed Senate February 20. To House Committee on Public Lands.

S. 2733—STEIWER—To add 1640 acres to Ochoco National Forest in Oregon. Public Lands and Surveys. February 12.

H. R. 7927—WHITE—To add certain lands to Boise National Forest. Public Lands. February 13.

H. R. 5681—KNUTSON—To withdraw lands from the Minnesota National Forest for the Leech Lake Band of Chippewa Indians in Minnesota. Indian Affairs. Report 843. February 24. Union Calendar 138.

S. 2430—O'MAHONEY—For elimination of lands from National Forests, parks, reservations and withdrawals in connection with such grants and other purposes. Public Lands and Surveys. January 22.

H. R. 7975—HOWARD—To provide for transfer of national-forest land to Zuni Reservation, New Mexico. Indian Affairs. February 14. S. 2876—HATCH—Indian Affairs. February 22. Report No. 463. March 10.

S. 872—MCNARY—To facilitate use of National Forests. Committee on Agriculture and Forestry. Report 345. Passed Senate February 28. To House Committee on Agriculture. March 5.

### NATIONAL PARKS

S. 2878—BYRD—To add certain lands to the Colonial National Monument in Virginia. Public Lands and Surveys. February 26.

H. R. 8139—KENNEY—To provide for establishment of monument on site of Camp Merritt, New Jersey. Public Lands. February 20.

H. R. 7982—LEWIS of Maryland—To establish National Military Park at battlefield of Monocacy, Maryland. Military Affairs. February 14.

### INDIAN AFFAIRS

H. R. 7856—PIERCE—Authorizing appropriation of $500,000 for the construction and operation of Indian sawmills on the Warm Springs Reservation, Oregon. To Indian Affairs. February 10.

H. R. 7902—HOWARD—To revise the relationship of the Federal Government to the Indians, to conserve and develop Indian lands. Indian Affairs. February 12.

### WILD LIFE

H. R. 7968—BLAND—To establish fish sanctuaries in United States. To Merchant, Marine, Radio and Fisheries. February 14.

S. 1138—WHEELER—To make lands in Montana range livestock experiment station available for a fish hatchery. Report No. 346. Passed Senate February 28. To House Committee on Agriculture. March 5.

H. R. 6175—BLAND—To amend act for protection and regulation of fisheries in Alaska. Report 866. March 3. House Calendar 140.

S. 2934—SMITH—To facilitate the acquisition of migratory bird refuges. Committee on Agriculture and Forestry. March 5.

### PUBLIC DOMAIN

H. R. 6462—TAYLOR of Colorado—To prevent over-grazing and soil erosion on the Public Domain. Public Lands. January 5. Report No. 903. March 10.

**Forestry Questions Submitted to The American Forestry Association, 1713 K St., N. W., Washington, D. C., Will be Answered in this Column. . . . . A self-Addressed Stamped Envelope Accompanying Your Letter will Assure a Reply.**

\+ + +

QUESTION: How many negro workers are enrolled in the C.C.C.? What is the number of negro camps, their location and the kind of work being done?—D. E. L., Mississippi.

ANSWER: The present enrollment includes 9,646 negroes located in about fifty camps in Maine, Vermont, New York, New Jersey, Pennsylvania, Maryland, Virginia, Alabama, Florida, Georgia, North Carolina, Illinois and Michigan. They are located on National Forests, National Parks, State Forests, State Parks and on private land under State supervision. The work is the same as that done by the camps of white men. In addition many northern and western camps have from one to twenty-five negroes.

---

QUESTION: What is the average yield in board feet per acre of Redwood?—D. R. R., Michigan.

ANSWER: Redwood ordinarily yields from 10,000 to 75,000 board feet per acre. Occasionally it yields as much as 400,000 board feet and more than 1,000,000 board feet per acre have been obtained under unusual circumstances. In such cases at least three-fourths of the timber is lost in felling and in the burning that follows.

---

QUESTION: What is the average yield of Douglas Fir?—D. R. R., Michigan.

ANSWER: Douglas Fir will run from 30,000 board feet to 100,000 board feet per acre, depending upon the type and location.

---

QUESTION: My maple and pine trees are covered with a cottony white insect. Will they kill the trees and how may I control them?—W.A.S., Pennsylvania.

ANSWER: These patches of white downy material on the bark and under the sides of the limbs are usually caused by a plant louse known as the bark aphid. It is closely related to the plant lice that infest rose bushes, and attacks the tree by sucking the sap instead of chewing the foliage.

These insects seldom remain long enough to kill the trees, but they frequently reduce their vitality, and repeated infestations year after year may result in death to the trees.

These masses of woolly aphids may be washed from the trees by a powerful stream from the garden hose. Whale-oil soap forcefully sprayed on the trees in May at the rate of one pound to four gallons of water gives good results. A tobacco preparation, such as "Black-leaf 40," or nicotine sulphate to which soap has been added, if repeated through the summer at intervals of a week or ten days, will kill many of the young insects as they hatch.

## PUBLIC FORESTS IN THE NATIONAL LAND PLAN

(*Continued from page* 150)

of economic forces, finally gravitate into some form of public ownership.

But economic forces are slow and variable in their operation. By the time their influence is finally effective much of the 224 million acres will have been subject to every destructive force and influence through which forest lands lose their powers of production, and their restoration to fully productive condition would entail staggering outlays of public funds. It would be the highest economy to anticipate this possibility by more rapidly placing the lands under constructive public management through the payment to their owners of the relatively nominal cash considerations for which title would be transferred without delay or further loss of values. In this fact lies justification for past, present, and proposed public programs of forest-land acquisition on a cash basis.

Public forest acquisition normally is conducted through two major agencies, one the several States containing the forest lands, the other the Federal Government. The responsibility must be divided on the basis of relative financial power and relative benefits. Some of the States with the largest areas of forest soil are so taxed with other demands upon their finances that they apparently would be incapable of financing any appreciable programs of forest acquisition and management, notwithstanding their sincere desire to do so. The benefits of streamflow stabilization and erosion control frequently accrue hundreds of miles from the States containing the forests established for such purposes. In recognition of these circumstances the Copeland Report approximates that of the 224 million acres ultimately to pass to public ownership the States will be able or disposed to take over only ninety million acres, leaving Federal action as the sole alternative for the remaining 134 million acres.

Adoption of the premise at once raises the query as to what kind of lands the Federal Government should acquire, the purposes of their acquisition, and the objectives of public benefit which should motivate their subsequent administration and management. The Federal Government now owns or is in process of acquiring some 165 million acres of National Forest land. To redeem its evident responsibilities it should proceed as rapidly as controlling circumstances will permit to acquire an additional 130 million acres. As a basic principle of action it should acquire the lands least susceptible of effective private or State management, the lands serving the widest variety of public purposes, the land on which the influence of constructive forest management is most widely interstate.

As an exploratory process, the Forest Service initiated an interesting assemblage of controlling data. Since it did not plan to extend the forests into naturally treeless regions, the first step was to delineate upon a large outline map of the United States the limits of the areas within which forests naturally occur, using for that purpose the wide array of dendrological data accumulated during a quarter-century of scientific research.

The next step was to impose upon the map the areas of major influence in watershed protection. One feature of the Copeland Report had been the classification of all watersheds into three categories, major, moderate, and minor. In such classification full use was made of all data previously obtained by the War Department, the United States Geological Survey, and other technical agencies. For the purpose of the acquisition study only the major areas were mapped.

For over 50 years this splendid pine has withstood the storms and grown to attain its position of outstanding prominence.

It well illustrates the position of *KELLY AXES* . . .

For over 50 years they have sustained their reputation for DEPENDABLE QUALITY.

TRADE MARK

TRUE TEMPER KELLY QUALITY

AXES
BUSH HOOKS
FIRE RAKES
GRADING HOES
FOREST FIRE FIGHTING TOOLS

MANUFACTURED BY
THE AMERICAN FORK & HOE CO., Cleveland, O.
*(Any Hardware Dealer Can Supply)*

A GRACEFUL sweep of cedar . . . tight-planked . . . strong ribbed . . . covered with seamless, water-tight canvas. The effortless stroke-stroke-stroke of a paddle unfolds the glory of all outdoors. Get an Old Town Canoe.

1934 Old Towns cost as little as $68. Send for a free catalog, showing models and prices. Also sailing, sponson, square-stern canoes and outboard boats. Including big, fast seaworthy models for family use. Rowboats. Dinghies. Write today. Old Town Canoe Co., 564 Main Street, Old Town, Maine.

"Old Town Canoes"

Sea Trout Blue; 4-25 to 11-25

Sportsmen Families Home Comforts

FISHING at Wachapreague Grade "A1"

Good eats, rooms and baths. Ventilation, home comforts "Excel." Mears' new Hook combination—3 to 1. Booklets. Hotel Wachapreague (Ocean Side), Eastern Shore, Va. Del-Mar-Va Concrete or Express. Ownership Management. A. H. G. Mears, Wachapreague, Va.

CUSTOM TANNER

Skins tanned, Chokers, Jackets, Coats, and Taxidermists. Repairs and storage.

W. W. WEAVER Reading, Mich.

University of Maine

Orono, Maine

The Forestry Department offers a four year undergraduate curriculum, leading to the degree of Bachelor of Science in Forestry.

Opportunities for full technical training and for specializing in forestry problems of the Northeast. Eight-weeks' camp course required of all Seniors in Forestry, in practical logging operations, on Indian Township, Washington County, Maine, under faculty supervision.

*For catalog and further information address*

FORESTRY DEPARTMENT,
*University of Maine*
ORONO, MAINE

Over the years, the Bureau of Chemistry and Soils of the Department of Agriculture has been determining and mapping the different gradations of soil erosion, and without pretense of extreme accuracy has classified the greater part of the United States into six types or degrees of soil erosion. The most serious type, the one in which erosion is most acute and general, was then platted on the acquisition program map, with some additions based on reports from Forest Experiment Stations.

Meanwhile another Bureau of the Department of Agriculture, the Bureau of Agricultural Economics, had been compiling economic and land-use data bearing upon the submarginality of lands for farm-crop production; securing its data from a wide array of sources, and confirming them by field studies. The result was a classification of the lands of the United States on the basis of the percentage of area unsuitable for farm-crop production. One such class included the sections fifty to seventy-five per cent submarginal; another those seventy-five to one hundred per cent submarginal. As a final step these classes of submarginal lands were shown on the map.

The composite map reproduced herewith presents an interesting picture and a problem of national welfare. Of course, no single geographic unit is exclusively of the type indicated since even the worst includes some land of good quality and high economic value for private management. The areas as determined by planimeter therefore are subject to certain as yet undetermined reductions; nevertheless they are reasonably indicative of the land situation as it exists today.

The type of most urgent and critical importance is the one in which both major watershed influence and serious erosion occur in combination. In gross, it aggregates 162,774,000 acres. Next in order of social and economic importance are the lands where erosion is less serious but watershed influence is major. The gross area of this type is 276,215,000 acres. The areas of serious erosion but less than major watershed influence total 119,427,000 acres. Lands not in the above classifications, and seventy-five to one hundred per cent submarginal for farm purposes comprise a gross area of 256,958,000 acres; while those fifty to seventy-five per cent submarginal amount to 77,706,000 acres. Combined, the various classifications amount to almost forty-seven per cent of the total land area or eighty-five per cent of that part of the continental United States naturally adapted to tree growth. The deductions which should be made to offset the better types occurring within the broad classifications are not known, but it is improbable that they would amount to as much as one-fifth of the total area, and they would be of smallest extent in the erosion and watershed classifications.

Looking far into the future to the time when eroding watersheds will have the same negative social and economic significance that they have in Italy today, it is difficult to avoid the conclusion that such areas should be largely if not wholly in public ownership. Their maintenance in or restoration to a forested condition is the most effective and economical means whereby their public values may be conserved, but forest management in such sites may be so impressed with the functions of watershed protection and soil control as to be beyond the practical limitations of private ownership and operation. The necessity for public forest ownership in the submarginal farmland zones is not so clearly established, as the soils generally will be more productive and the commercial growing of timber will be less subject to limitations of public welfare and security. Nevertheless, limited proportions of such categories should be included in the public forests so that they may be most completely representative of all forest types and sites.

Translating these factors into a specific program of action, there is reasonable ground for the assumption that of the areas combining both major watershed influence and serious soil erosion, seventy-five per cent of that part chiefly valuable for forest purposes and susceptible of effective public management eventually should vest in public ownership. Even where erosion is less severe but watershed influence is major, a fifty per cent public ownership would be fully warranted. In the zones of less than major watershed influence but subject to serious soil erosion public action would relate only to the most acute phases of erosion, which probably would not comprise more than twenty-five per cent of the whole. In the areas submarginal for farm purposes the need for public ownership is least acute, but a proper distribution of public forests both in relation to forest types and to centers of wood utilization would dictate public ownership to the extent of ten per cent of such land types. Singularly enough, these approximations although worked out by principles wholly different from those used in the Copeland Report, give totals within ten million acres of those approximated by the other methods, although regional variations between the two estimates are much greater.

In these calculations there has been no separate and specific recognition of the factors of public ownership in furtherance of wildlife propagation or for the provision of inspirational, recreational, and educational opportunity to the American people. But—in a program involving so vast and widely distributed a proportion of the total land area of the nation and covering such a diversity of forest types and conditions inevitably there will be a large proportion of the publicly-owned forest admirably suited to the needs of wild birds and animals and to meet public requirements for outdoor recreation and all of its spiritual and educational concomitants. In the ordering and management of the public forests such uses frequently would be dominant in importance and would be amply provided for in the forest working plans or by other appropriate executive or administrative action.

## FIELD AND FOREST FOR BOYS AND GIRLS

(*Continued from page* 167)

snakes running into the mouth of the mother in times of danger, but this is quite different from their being swallowed.

Most people think the bat is blind, and we have a common phrase "as blind as a bat." Perhaps this belief has arisen because the bat flies about only at night. Nevertheless, bats have good eyes which are especially built for seeing in the dark. In the daylight, their eye-sight is poor, however.

People also say that bats like to entangle themselves in human hair. Because of this, one always hears some one saying "cover up your head" when a bat is seen flying about. There is no reason for such belief, for bats are very careful not to become entangled in any sort of material. They often fly quite low over people's heads, but I have never heard of their becoming entangled in anyone's hair. They are perfectly harmless, and are very valuable animals.

These are only a few of the countless beliefs, widely held, though without factual basis. They are passed on from one generation to the next by persons who have never seen proof of them, but believe that other people have. These people usually say, "I never saw it happen, but I have heard other people say it is true." These stories usually have small beginnings, but grow rapidly each time they are related.

## NEW LIGHT ON OLD TREE MYSTERIES

(*Continued from page* 157)

beyond peradventure and *nachgeprüft* time and again, he establishes the point that lightning never strikes the earth's surface except at places where two or the ribbons of earth rays cross each other. Such a point sends out rays that are doubled in strength, by the two emanations being superimposed on each other, thus forming a strong negative charge that is the logical point where the lightning will strike. He cites case after case to prove his point.

Still more amazing is the effect of the rays on animal life. He shows that animals are highly sensitive to these rays. A herd of cattle, for instance, will not bed down for the night in places under the influence of earth rays. That accounts for the fact often observed, both among dairy herds and still more among plains cattle, that in a bedded-down herd one may find open spaces where no cattle can be induced to lie down. Dogs having free choice of sleeping places, always instinctively avoid places exposed to earth rays; so do horses and many other animals. On the other hand, cats deliberately seek the rays; still more interesting, bees and ants invariably build their homes in spots that are exposed to the rays, and the stronger the rays the more honey the bees will gather.

The most amazing of the revelations is the apparent inter-relationship between earth rays and cancer of human beings. In one case the Baron was celled to a small city, Vilsbiburg in Bavaria, where fifty-four fatal cancer cases had occurred within a certain period. The place was entirely unknown to the investigator and to avoid interference and unwelcome voluntary information, he asked that a policeman escort him during his investigations. As a result the *Herr Baron* found an extensive network of underground waterveins, which he charted and sketched on a large scale map of the place. The map was then handed to the authorities with a request that they designate and mark every case where a person had died of cancer. Every one of the fifty-four cases turned out to have occurred in a place where the patient's bed stood exposed to the earth rays! That however is something we can leave to the medical authorities to puzzle over, our interest lies in another direction.

The book devotes a chapter to the influence of earth rays on plant life, a most interesting chapter. With words and photographs he proves that the peculiar clearings in forests where trees are stunted, or absent altogether, are invariably spots lying over a crossing of two of the underground veins! That trees struck by lightning are invariably trees standing over veins having strong earth ray emanations! I will presently apply that to the cases mentioned at the opening of this article, but before doing so I must tell the ways and means by which the scientific German locates these rays. No doubt you have pictured the investigator surrounded by delicate electrical instruments and busily reading volts, amperes, ohms and farads! Now prepare yourself for the anticlimax. The only instrument used is, or was, the forked branch of a twig cut from a living tree! The old "divining rod" used by well diggers and "water witches" for the purpose of locating water! Those old boys were scientists all the time, but did not know it! Their theory was a bit off center, but they were long on performance, for actually they did find water.

The old timers thought that there was affinity between the green twig and water in the soil, when the actual facts were that it was the earth rays, unsuspected by them, that activated the twigs! Like you and most everybody else, I have ridiculed the silly performances of these "water witches" as something harking back to the days of witchcraft and sorcery and unworthy of the serious attention of educated, thinking men! I apologize to them profusely. That these divining rods will not work in every case and in everybody's hands is perfectly explainable by Lakhovsky's cellular theory. When the wave lengths of our individual cells happen to be in resonance with the wave lengths of the earth rays, the twig functions; when not, there is no response.

The Baron von Pohl has graduated from twigs to the use of brass and steel rods, but so far I have been unable to make the metal rods perform in my hands; I am still at the twig stage. Needless to say, as soon as I had digested his book I was all steamed up to try matters with my own hands. Eventually I succeeded and to my delight found that I was highly sensitive to the earth rays. A few of my friends were able to work the divining rod, others got no rsponse whatever. One of them was so dead to their influence that not only did the twig not work in his hands, but the moment he touched a person in whose hands a twig was working at the moment, there was instant cessation of the twig's function! When the negative person removed his hand from the person engaged with twig in his hand, there was immediate resumption of the functioning. To me it seems we have merely touched the edges of a new scientific world.

Equipped with this new found ability to locate rays, and checked by friends equally sensitive to the rays, I proceeded to explore some of the tree mysteries mentioned at the beginning. There have been few opportunities to explore the mysterious openings in the woods, but those few amply confirm the von Pohl claims. The case of the fruit trees in the orchard referred to turned out to be a clear case of earth rays overlying an underground stream of water. The trees so planted

*Let the Rain Pelt Down. You'll be Comfortable Here.*

THE Tapatco Special "Storm-Proof" Sleeping Bag gives you all the warmth, ruggedness, and convenience of bags costing two and three times as much. Strong water-proof cloth covering, both top and bottom. Special Kapok filling, soft as down, vermin-proof, cold-proof, resilient, and very light in weight. Inner casing quilted. No quilting seams in outer covering to leak. Button or zipper fastener at side or bottom. Extra warm padded pocket for feet. A 48-inch extension of water-proof cloth at top protects head against wind and storm. Kanok pillow attached. Packed in water-proof Duffel bag. It's the finest bag you've ever seen.

If your dealer can't supply, will send prepaid on receipt of price. Satisfaction guaranteed.

COMPLETE WITH DUFFEL BAG.....$21.75

Another good Tapatco Sleeping Bag without all the refinements of the "Storm-Proof" is the "Rough and Ready" .....$8.25
(With canopy top—$12.25)

The American Pad & Textile Co.
Dept. 114 Greenfield, Ohio

SPRING!

is just in the offing.

Dress up in a FECHHEIMER MADE-TO-MEASURE, First Quality, All-Wool Uniform.

Correct fit GUARANTEED!

Also Jackets, Blouses, Mackinaws, Cruiser Coats, and Cotton Ready-Made Garments.

*Write for Samples and Prices—No obligation!*

The Fechheimer Bros. Co.
*Uniforms for Over 46 Years*
4th & Pike Cincinnati, Ohio

A FOREST SAVED . .
1S A FOREST RAISED

SINGLE & DOUBLE BIT
AXES
ALL PATTERNS

HIGHEST QUALITY FOR THE LAST HALF CENTURY

ALL KINDS OF
LOGGING TOOLS

CHAIN HOOKS, SWIVELS, COLD SHUTS & EVERY TOOL KNOWN FOR LOGGING. ALSO PULASKI MULTI-USE TOOLS

WARREN AXE AND TOOL CO., Warren, Pa.

## Classified Ads

Advertisements from reputable individuals and concerns will be inserted under this head at the rate of 10c a word per insertion, cash with order. Display rates on application. No advertisement will be inserted for less than $1.00. Abbreviations, initials and letters will be counted as words. Name and address must be given, as advertisements will not be inserted in this section with only a box number. Address all orders to Classified Advertising Department, AMERICAN FORESTS Magazine, 1713 K Street, N. W., Washington, D. C.

**Attract Wild Ducks & Fish** with Wild Rice, Wild Celery, Duck Potato and 30 others described in free literature. Write for low prices. Many years of experience. WISCONSIN AQUATIC NURSERIES Box 331-K, Oshkosh, Wis.

**GLASS EYES**

Taxidermist Supplies, Tools, Bird-Bodies, Head Forms and Panels

Catalog FREE

"SCHOEPPER EYES" 134 West 32nd St. NEW YORK

*Taxidermy*

TAXIDERMIST SUPPLIES — Tanning heavy skins for rugs and robes, light skins for chokers. Rubber heads, eyes and fasteners for sale. Fur work on coats and chokers. Game heads mounted. Head forms for Deer, Moose, Elk, rug heads waxed. W. W. Weaver, Reading, Michigan.

TAXIDERMY SUPPLIES — Quality Artificial Eyes, Teeth, genuine Jonas headforms. Tools, materials, etc. Everything for the progressive taxidermist. Send for big illustrated catalogue—Free. Jonas Bros., 1042 Broadway, Denver, Colo.

*Cameras*

SAVE 35% TO 60% on used or new Kodaks, Cameras, Motion Picture Cameras. Latest Bargaingrams will be mailed free. Write for your copy to Camera Headquarters, BASS CAMERA COMPANY, 179 W. Madison St., Chicago, Ill.

DUCK! FISH! GAME! FOODS. Plant now. Describe place. Planting suggestions free. TERRELL, 29C, Oshkosh, Wisconsin.

*Tree Surgery Supplies*

BRACING, WATERPROOFING, CABLE, LAGS, etc. Write Rollin Tabor, Mount Vernon, Ohio.

*WE HAVE . . .*

**Papier Mache Manikins**

that fit all sizes of deer heads you want to mount. Right turn, left turn, straights and regulars. Send for our chart catalogue today.

**Papier Mache Specialties Co.**

Reading, Michigan

**CHINESE ELM**

Trees strong. Transplanted Stock. True northern strain. For quick, beautiful, graceful trees plant Chinese Elms. 4-5 ft., 5 for $2.20. 10 for $4.00; 6-8 ft., five or more @ 70c each. Catalog (mention this paper) free. 10 Gold Medal Delphinium, $1.25.

SWEDBERG NURSERIES, Battle Lake, Minn.


still live, but they are stunted and spindling and give little promise of fruit.

The row of poplars mentioned again confirmed von Pohl's theories. In each one of the three gaps in the row a strong reaction of the twigs showed a ribbon of rays at right angles to the row of trees. Nothing has been done about it, because there is nothing to be done. In the case of hedges, the gaps have not always shown the presence of rays, but in about four cases out of five they are present.

The most surprising discovery was the fact that immediately adjacent to the tree with a cavity that refused to heal, there was found not only a strong emanation of earth rays, but actually a crossing of two ribbons of these rays. The reaction on the twig was so strong that is was violently jerked downward, almost out of my hand! Please bear in mind that I am not arguing the point, I am merely stating facts for what they may be worth. At this writing I am making efforts to determine some means by which the effect of rays may be cancelled.

It is to be noted that the mineral veins and underground streams that give off earth rays are not those near the ground surface. The nearer the surface they are, the weaker their reaction, until within thirty feet of the surface there is no reaction at all. Pools, ponds, water, gas or sewer pipes give no reaction and the divining rod will not respond to their presence. On the other hand, the deeper these sources of rays lie beneath the surface, the stronger their reaction. A water vein four or five hundred feet below the surface will violently agitate the divining rod, while one a hundred feet deep will give a markedly weaker reaction. Which seems to confirm the theory that the rays come from the "magma" of the earth's interior, and the nearer the source of the ray it is picked up by the concentrating agent, the stronger its reaction. That these rays extend into the ether and stratosphere above us is indicated by the fact that during the flight of a free balloon, von Pohl was able to pick them up 5,000 feet above the surface of the earth!

All of this sounds fantastic and opens a long vista into the unbelievable. As for myself, I have been able to find enough confirmation of both Lakhovsky and von Pohl so that I am a believer. Since we are actually making use of so many of these rays, in the form of radio and other applications, we can not afford to be disdainful of their effects on our everyday life or that of plants and trees, which are masses of living cells much as we are.

It will be well to keep our minds open!

## POSTED PARADISE

(*Continued from page* 152)

my reel spun a wild song. My line ripped off, yard after yard! Wasn't there any bed in this stream? I stepped ahead, the water whipping angrily about the tops of my hip boots. But I couldn't move now. Senor rainbow was coming back—and how! I checked my reel lightly, taking back the line at the speed of the coming battler. Fifteen feet downstream he broke water with a noisy splash, arching his brilliantly colored body as he left the water.

"Watch him!" Al cautioned.

I was watching him, realizing all the while that if he took a notion to start downstream in that rushing water I was either due to lose him or else get a cold bath. And I would have taken the cold bath!

But he didn't go downstream. It seemed that luck was taking pity on my efforts and guided the rainbow back toward me. Again I checked the reel and gained a few feet. Back and forth, up and down, crossing and recrossing, and then sullen, stubborn, dogged resistance. One more plunge to the bottom and a couple of erratic capers, and he came to shallow water, where I buffeted him onto dry land.

"Whew!" Al sighed. "I wouldn't have given a nickel for your chances of taking that baby."

He should have been labeled "final," for that was the last fish we took that day, although we continued on down the stream until we came to a fence upon which a sign hung suspended—DONT FISH HEAR—POSTED.

The spelling was bad and the printing, in various sizes of capitals and small letters, was worse, but it was effective enough and we turned disconsolately to the road. It was high noon.

"Let's go back to my car and eat," I suggested.

"Okay," Al agreed.

As we passed along the well kept highway we watched the stream winding like a silver ribbon between the pines and cedars far below. At one point, several hundred feet above, we looked down upon a wide and deep pool where fish were rising in numbers.

"Gosh, what a pool!" Al breathed. "But look at that sign!"

Private property! No fishing! Keep out! No trespassing! There ought to be a law ag'in it—all this posting of state-stocked streams—but it seems that the law works in the opposite gear. It's for it!

We cooked dinner at my camp, talked over the possibilities of fishing that afternoon and decided instead to find out, for our own information, just how much of the Pecos River was posted between two certain points and then see what could be done about it.[1] And we learned some startling things.

In a stretch running from the town of Pecos to Irvin's lodge, ten and one-half miles in length, there is a scant four miles of unposted stream in which are seventeen camping sites, all over-inhabited. And the stream is stocked by state fish, purchased with fishing license funds and other monies derived from the very fishermen who are excluded from the six and a half miles of fishing stream!

Take the four miles of unposted property and put on it seventeen camping sites, with an average of three cars on each place. Estimate two fishermen average to each car and what have you? Fishermen stepping on one another's toes; trout that are frightened half to death; swimming parties; tin cans by the hundreds; axes that are over-busy; and pandemonium in general everywhere.

And, as an editorial in one of the State's largest newspapers put it, fishermen as a rule are not of a destructive nature. They do not camp on posted land. They merely crawl through barbed wire fences, staying in the stream almost altogether, and do nothing but fish. They are a gentle, docile lot, but the time is coming, unless something is done about posting all their paradises, when they will rise in arms and either prove their point or else compel the landowner to go to a lot of expense and unwanted publicity. As long as they pay for the fish—why shouldn't they be allowed the pleasure and joy of matching wits with those spectacular battlers?

Which all leads to the possible prediction that, when—and if—we get up there, St. Pete will cast a roving eye over our fishing tackle and perhaps say:

"Drop that tackle, mortal. Everything's posted up here!"

## Shawhan Named West Virginia Director of Conservation

Hubbard W. Shawhan, State Forester of West Virginia since March, 1933, was named Director of Conservation and Chief of the newly organized Department of Conservation by Governor H. G. Kump on February 17. On the same date Governor Kump announced the appointment of five members to the Conservation Commission created by the West Virginia State Legislature last spring. The Commissioners are: George W. McCauley, of Moorefield; A. B. Brooks, of Wheeling; George G. Somerville, of Point Pleasant; Dr. Gory Hogg, of Lewisburg; T. H. Clagett, of Bluefield.

As now organized, game, fish and forestry are all under the same commission.

## Hoosier Coal Mines to Plant Trees

A group of coal companies in Indiana are inaugurating a tree planting project designed to reforest their lands left bare by the strip mining of coal. Orders for approximately a million and a half trees, of which 800,000 will be black locust and 700,000 evergreen and walnut transplants, are being placed with the Indiana Department of Conservation. With this stock approximately 1,500 acres in the mining section of southwestern Indiana will be reclaimed.

The companies included in the project are: The Enos Coal Company, Patoka Coal Company, Electric Shovel Coal Corporation, Maumee Collieries Coal Company, Sherwood-Templeton Coal Company, Central Indiana Coal Company, and the Blackfoot Coal Company. The plantings will be made by the companies with the exception of the Maumee Collieries Company, in which case the planting will be done by Boy Scout troops as part of their Scout conservation work.

## New York Expects Demand For 35,000,000 Trees

During the year 1934 the conservation department of New York anticipates a demand for 35,000,000 trees for forest planting within the State and is making plans to handle these demands from its six tree nurseries. Last year the state nurseries supplied slightly over 25,000,000 trees to citizens of the State, and a still larger demand is expected during the current year, according to Conservation Commissioner Osborne.

## D. A. R. to Plant Historical Trees

The planting of nut trees from historic grounds in the National Historical Grove will be a feature of the annual Congress in April of the National Society of the Daughters of the American Revolution, according to an announcement of C. A. Reed, chairman of the Cooperative Council directing the National Nut Tree Planting Program. Mrs. Russell William Magna, President General, has issued through the National Chairman of Conservation and Thrift, Mrs. Roy A. Mayse of Kokomo, Indiana, an invitation to chapters to send qualified trees to this living memorial hall in the national capital where famous men, women, and events in American history are honored.

Mrs. Magna, members of the Cooperative Committee, chapters which contribute or mark trees, Boy Scouts, and officials of The American Forestry Association will participate in the tree planting ceremony which will be held in the afternoon of April 21. Among the living memorials to be dedicated are trees from Valley Forge, President Grant's home at Galena, Illinois, and St. Mary's the landing place of Maryland colonists 300 years ago.


**FREE BOOK!**

*To Home Owners*

Send for this wonderful book. Learn how song birds protect trees, plants, and shrubs—destroy insects, and save millions of dollars yearly. Joseph H. Dodson gives lifetime secrets of different birds and tells how to attract them. Thousands now starting bird sanctuaries. No place too small.

**WHAT SONG BIRD EATS 2,000 Mosquitoes a Day?**

You'll find the answer in this book, and many other valuable facts. It also contains full line of DODSON'S FAMOUS BIRD HOUSES—FEEDING STATIONS, ETC. **Get your FREE copy today!** If you want Color Photo Picture of your favorite bird, include 5c to cover expense.

JOSEPH H. DODSON, INC.
BIRD LODGE
124 Harrison St. Kankakee, Ill.

28 room MARTIN HOUSE $18.00
F. O. B. Kankakee
Copper roof $4 extra

**1934 BINDERS**

**$2.50 Each**

THE AMERICAN FORESTRY ASSOCIATION
1713 K St., N. W., Wash., D. C.

*Things are happening in* WASHINGTON

America's Center of National Authority Has Become the World's Economic Capital . . . When You Come, Make Reservations at the Institution Where Government Personages Reside and Great Events Occur

SINGLE ROOM RATES BEGIN AT FOUR DOLLARS
AND DOUBLE ROOMS ARE FROM SIX DOLLARS

THE *Mayflower*

. . . Washington's Internationally Famous Hotel

Connecticut Avenue at L Street

Mr. R. L. Pollio, Manager

*Index to*

## ADVERTISERS

**APRIL, 1934**

| | PAGE |
|---|---|
| American Fork and Hoe Co. | 187 |
| American Pad and Textile Co. | 189 |
| American Telephone & Telegraph Company | 2nd Cover |
| Atlas Powder Company | 179 |
| Bartlett Manufacturing Co. | 182 |
| Bass Camera Company, Inc. | 190 |
| Brown Company | 182 |
| Cavalier Hotel | 180 |
| Central Maine Forest Nursery | 184 |
| Diener, Richard | 182 |
| Dodson, Inc., Joseph H. | 191 |
| Du Pont de Nemours & Co., E. I. | 173 |
| East Michigan Tourist Association | 176 |
| Elfgren Nurseries | 182 |
| Fechheimer Bros. Company, The | 189 |
| Franklin Forestry Company, Inc. | 184 |
| Herbst Brothers, Inc. | 180 |
| Hester Plow Co., Inc. | 3rd Cover |
| Idaho School of Forestry | 186 |
| International Harvester Co. of America | 171 |
| Jenkins Nursery, The | 182 |
| Jenkins Nursery, The | 184 |
| Jonas Brothers | 190 |
| Keene Forestry Associates | 184 |
| Kelsey Nursery Service, F. W. | 177 |
| Kelsey Nursery Service, F. W. | 184 |
| Maine School of Forestry | 188 |
| Mayflower Hotel, The | 191 |
| Mears, A. H. G. | 188 |
| Missoula Chamber of Commerce | 176 |
| New England Council | 174 |
| New York State College of Forestry | 186 |
| Northern Pacific Ry. Co. | 4th Cover |
| Old Town Canoe Company | 188 |
| Paper Mache Specialties Co. | 190 |
| Peat Import Corporation | 181 |
| Plumb, Inc., Fayette R. | 183 |
| Smith & Company, D. B. | 175 |
| Schoepfer, G. | 190 |
| Swedberg Nurseries | 190 |
| Tabor, Rollin H. | 190 |
| Terrell's | 190 |
| Warren Axe & Tool Company | 189 |
| Weaver, W. W. | 188 |
| Weaver, W. W. | 190 |
| Western Maine Forest Nursery | 184 |
| Western Maine Forest Nursery | 185 |
| Wisconsin Aquatic Nurseries | 190 |
| Woods, J. B. | 179 |


## NATIVE CEDAR

(*Continued from page* 161)

were naturally proud of them and evidenced in their carving the same jealous pride they displayed at their potlatches. They were a symbol of a chief's importance and standing. But this art is now dead. Totems are no longer made. Many have fallen from old age. They have, in many instances, decayed and rotted away or been despoiled by souvenir hunters, or found their way to museums where they are properly protected. It is logical, as some authorities agree, to think that the totems, as they are generally known, cannot be much beyond fifty or sixty years of age, for the climatic conditions of the British Columbia Coast with its damp winds from the sea and heavy rain fall, make hewn cedar suffer too dearly.

The technique of totem pole carving and the traditions attached are impressive. A suitable tree was carefully selected and hauled long distances to be erected in memory of some notable chief by his proud descendants, amid elaborate ceremonies. So-called "fathers of the phratry" were chosen to supervise the carving, a strict form of etiquette was followed, and high fees paid. These "fathers" took complete charge of the work. Sometimes the expenses were too large, with too much feasting and present giving, that after the tree had been felled and dragged to the village, the family's finances were so reduced the tree was left uncarved until the resources could be replenished. Then came the important business of choosing a carver. There were great Indian carvers, as there are great white artists today. It was preferable to choose a carver from among the "fathers," but if he were not sufficiently gifted and renowned, he chose a carver to represent him, while he stood over the artist as he worked. The carving was done under shelter and with as much secrecy as possible. The design was chosen and arranged from the family's crests. The carver was usually paid in guns, blankets, or skins and, it is said, the fees were usually about six hundred dollars.

The carving of the totem poles was done in high and low relief, with additions where necessary of other bits of wood, to realistically represent, for example, the beak of a raven. Native colors were first used, which possessed a charm and mellowness that made the old totems things of beauty, with the soft brown of the aging, weathered cedar. The native colors were red, yellow, black and blue green. The red is said to have been a baked iron ore; the yellow, ochre; the black, from various sources, some from the roots of fern; and the blue green a copper ore. These were used effectively to add color to lips, eyes, and caste marks on the carved figures. White man's paint soon spoiled the harmonious native colorings. The garish, hard colorings on modern imitation totems are entirely unauthentic, and the beauty of real old Indian painting cannot be adequately described.

It is to be regretted that the contact of the native with the white man has robbed him of his artistic desire to express his conception of nature, myth, and individual conventionalized design. The work of his hands has deteriorated and almost disappeared, only to be supplanted by the modern and often hideous products of mass production of the factory. The art of the modern remnants of the West Coast Indians has unfortunately dwindled to impossible mediocrity in many cases, where it has not died out altogether.

## WHO'S WHO

### Among the Authors in This Issue

L. F. KNEIPP (*Public Forests in the National Land Plan*) is Assistant Forester, United States Forest Service. He entered forestry work thirty-four years ago as a Forest Ranger in Arizona. Since that time his service as Forest Supervisor, Assistant Forester in the Branch of Lands, executive secretary of the National Conference on Outdoor Recreation, and other fields of forestry has kept him closely in touch with national trends in conservation and land planning.

L. F. Kneipp

ERNEST GONZENBACH (*New Light on Old Tree Mysteries*) served as an Engineer Officer with the A. E. F. during the World War. At the present time he is practicing agriculture in Kentucky—something he has wanted to do all of his life. He is the author of a number of books.

RAY GWYNN HOGAN (*Posted Paradise*) was born in Missouri but has lived in New Mexico since he was five. He began writing at an early age and has been steadily at it ever since. When not writing he may be found on his favorite lake or stream, hunting or fishing.

GENEVA LENT (*Native Cedar—An Art Medium*) was born in Ontario, Canada, but is now living in Alberta. She spends most of her time in study and research, finding her recreation in music, painting and writing. Her articles and stories have been accepted by leading periodicals in Canada and the United States and have been published under various pen-names, the most frequent being "Gene Dorante."

Geneva Lent

ROBERT W. AYRES (*Fire and Water!*) is connected with the United States Forest Service, San Francisco, where he is assistant in the office of Public Relations. Mr. Ayres is a graduate of the Yale Forest School.

FRANK RANNEY (*It Has Taken Me Off the Road*) writes: "I was born January 13, 1913 at I A. M. There are thirteen letters in my name. I draw thirteen dollars every thirteen days." Although his parents were "show folk," travelling constantly, Mr. Ranney was born in New York City and graduated from the High School of Commerce there.

FARRAN ZERBE II (*I Have Lived with Nature—Man's First Friend and His Last*) is no longer a member of the C.C.C., having left camp last November to secure a position as clerk with the Pennsylvania Control Board. He holds an A.B. in English Literature from Lafayette College, Easton, Pennsylvania, and is at present living in Tyrone.

JOHN HARVEY FURBAY (*Field and Forest for Boys and Girls*) is Director of Nature Education at the College of Emporia, Kansas. G. H. COLLINGWOOD (*Forestry in Congress*) is Forester for The American Forestry Association.

# HESTER FIVE DISC FIRE LINE PLOW

## FOR MAJOR FIRE LINE CONSTRUCTION

**Approved and Recommended by Federal Foresters**

WHERE the type of woods and topography of the land will permit the use of the new Caterpillar "25" (or any other tractor of like size and power) the Hester Five Disc Fire Line Plow will produce a clean, flat bottomed fire line 8 to 9 feet wide in a one trip operation . . . a continuous line on curves as well as straight cuts.

For efficiency and economy of operation, the Hester Five Disc Plow is unequalled by any other equipment in use today for it can be successfully operated in any virgin woods through which the tractor can be driven, and with tractor in second gear will produce from 10 to 15 miles of fire line per day.

The plow has perfect penetration and when adjusted for the desired depth of cut it requires no further attention or adjustment from the tractor operator.

Action of the discs throws the top soil bottom side up and clear of the fire line cut. This materially increases the effective width of the fire line and discourages regrowth of vegetation in the line . . . the fifth disc cuts out the center baulk, making a flat bottomed line that trucks and automobiles may readily cross in safety.

Illustration below shows in detail the rugged construction and assembly (discs not shown) of the Hester Five Disc Plow. The plow frame is electrically welded into a single unit, with reinforcing plates and struts welded into place . . . a practice which keeps down the total weight of the plow. Castings, designed for strength without excess weight, are ground and machined to fit and all bearings are equipped for pressure lubrication.

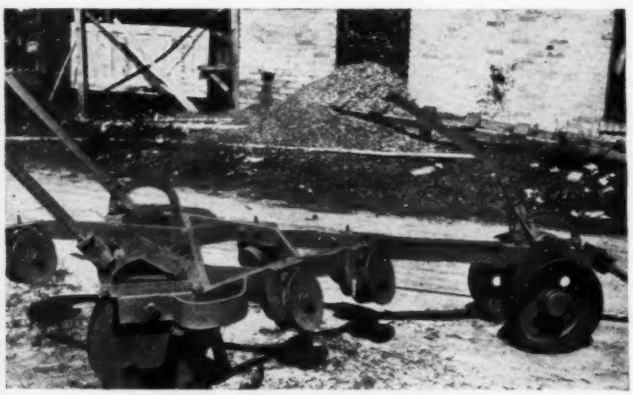
The Hester Three Disc Fire Line Plow is designed to follow the new Caterpillar "20" (or any other tractor of like size and power) where the type of woods and topography of the land will not permit the use of the larger and more powerful tractor. This plow, with tractor running in second gear, will produce from 10 to 15 miles per day of clean, flat bottomed fire line 5 to 6 feet wide.

HESTER FIVE DISC FIRE LINE PLOW

Produces a clean, flat bottomed line 8 to 9 feet wide.
Shipping weight (complete with discs) . . . 2340 lbs.

HESTER THREE DISC FIRE LINE PLOW

Produces the same type of fire line 5 to 6 feet wide.
Shipping weight (complete with discs) . . . 1143 lbs.



HESTER FIVE DISC FIRE LINE PLOW

Construction details and assembly - - discs not shown.

Of the same general design and rugged construction as the Hester Five Disc Plow, the Hester Three Disc Fire Line Plow being smaller and lighter in weight can be easily transported to "going fires" without removing discs or any other parts. It may be loaded on the same truck with the tractor provided the truck body is approximately 3½ feet longer than the overall length of the tractor.

For reworking old fire lines and renewing their effectiveness at a much lower cost than the production of new lines . . . you can order a Hester Fire Line Maintenance Plow especially built to fit your particular requirements for fire line maintenance work. Very light in draft and a marvel of efficiency, this plow will soon pay for itself and pay dividends in reduced cost per mile of fire line.

*Get in touch with your nearest "Caterpillar" Dealer or write direct for further information*

## HESTER PLOW CO., Inc., Jacksonville, Florida, U. S. A.

Hester Plow Company builds a line of tractor plows for agricultural users. Your inquiry giving information as to make, year and model of tractor and your plowing requirements will be answered promptly. More than 12 years' experience in building tractor plows.

# For 1000 Miles - Companion of Mountains

# THE NORTH COAST LIMITED

## With the Comforts of *Air-Conditioned* Equipment

FOR more than a thousand miles in the American Northwest, the wild grandeur of Rockies and Cascades accompanies the North Coast Limited, whose observation-club cars and diners will have 100% air-cleaning and conditioning by means of mechanical refrigeration for the 1934 summer season, and thereafter.

Are you traveling in the West this year? Be sure to include at least 1000 scenic mountain miles on the Northern Pacific. Fares west are down and there's no Pullman surcharge on the Northern Pacific. Dollars buy more in American travel than abroad. May we figure the cost of a western trip from your home town? No obligation. Just mail the coupon.

*Pacific Northwest...Yellowstone Park...Montana Rockies...Dude Ranches*
*Alaska...Canada...Oregon...Washington...California*

NORTHERN PACIFIC
YELLOWSTONE PARK LINE

B12-A

E. E. Nelson, 645 Northern Pacific Bldg., St. Paul, Minn.

Mr. Nelson: I am interested in a trip to.....

I wish to include.....in my itinerary.

Name.....

Address.....